Routes to tour in Germany

The Swabian Alb Route

Aalen
Nördlingen
Heidenheim
Geislingen
Urach
Tailfingen
Ebingen
Trossingen
Messtetten
Tuttlingen

German roads will get you there. South of Stuttgart the Swabian Alb runs north-east from the Black Forest. It is a range of hills full of fossilised reminders of prehistory. It has a blustery but healthy climate, so have good walking shoes with you and scale a few heights as you try out some of the 6,250 miles of marked paths. Dense forests, caves full of stalactites and stalagmites, ruined castles and rocks that invite you to clamber will ensure variety.

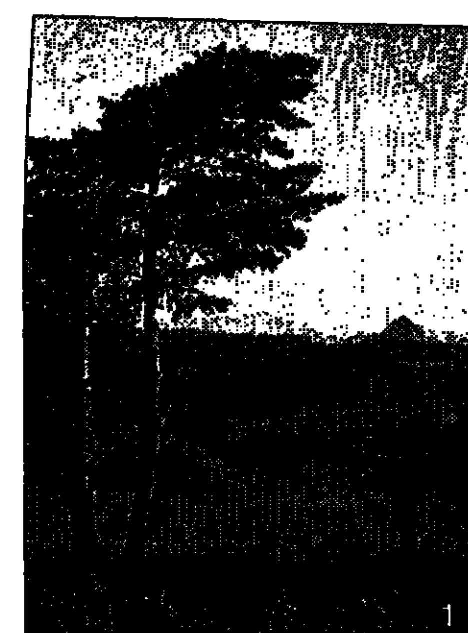
You will also see what you can't see from a car: rare flowers and plants. The route runs over 125 miles through health resorts and nature reserves, passing Baroque churches, late Gothic and Rococo architecture and Hohenzollern Castle, home of the German Imperial family.

Visit Germany and let the Swabian Alb Route be your guide.

1 View of the Hegau region, near Tuttlingen
2 Heidenheim
3 Nördlingen
4 Urach
5 Hohenzollern Castle

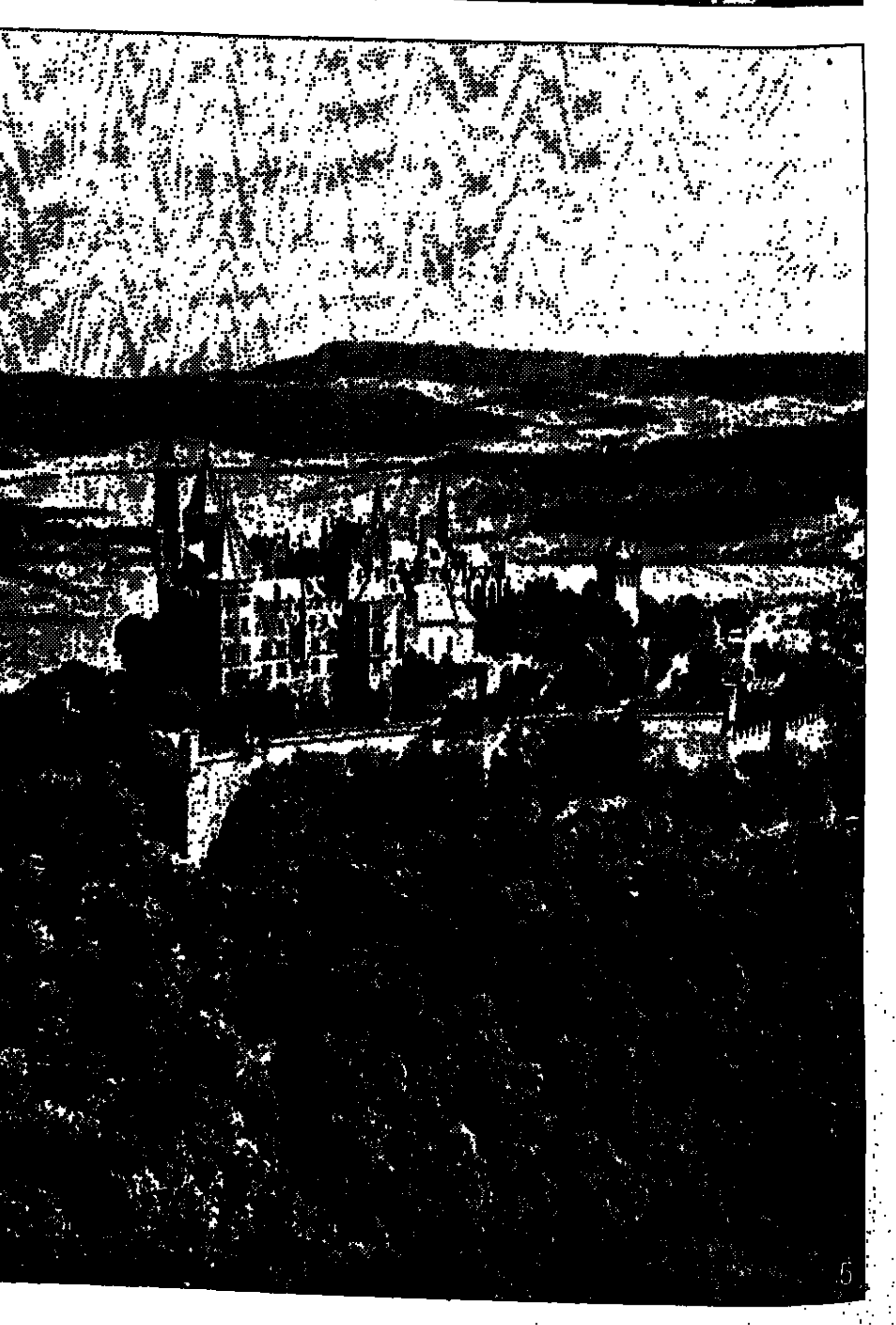












The German Tribune

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European Community heads keep summit tranquil

Frankfurter Rundschau

The London summit meeting of the 12 European Community heads of government will make no visible mark on either the development of the Common Market or the course of world affairs.

The summit went ahead as smoothly as the host, British Prime Minister Margaret Thatcher, had planned.

Whenever a debate seemed likely to occur on one issue or another Mrs Thatcher, in firm control from the chair, nipped it in the bud with reference to an agenda that was full to overflowing.

President Reagan's troubles in Washington and their consequences for East-West relations and the disarmament negotiations are a major worry facing the 12 heads of government and their Foreign Ministers.

Most admitted it. They seem to have agreed that what now matters is to come to grips with at least some of the problems from Western Europe.

The most important issue is probably the negotiations on a reduction in non-nuclear forces "from the Atlantic to the Urals" proposed by the Warsaw Pact states last spring.

France's government constellation, with a Socialist President and a Gaullist Premier, makes it difficult for Paris to agree to disarmament talks that might prejudice the country's defence doctrine.

That in turn makes it more difficult for the 11 Nato member-countries in the European Community (all except Ireland) to agree, as they badly need to do, on a joint approach.

With Mrs Thatcher stressing at the summit the importance of solidarity with the United States "now in particular," it is clear to see why no headway was made in what may be assumed to have been most intensive summit deliberations on this and related issues.

Even the diplomatic aides of Chancellor Kohl and Foreign Minister Genscher had nothing to say on the subject when they might be expected, in a general election campaign, to make maximum mileage out of any headway, no matter how minor.

Several heads of government described as "depressing" or "shocking" the outlook for future financial requirements sketched by Jacques Delors, who was reaffirmed as European Commission president for a further two years.

The Community, he said, would be reeling under the burden of agricultural surpluses and the financial fillip needed by the five poorer member-countries.

All 12 can now at least be said to realise they will have to cross swords next year over the Community's future financial arrangements.

Chancellor Kohl realised that Bonn would be well advised to make swift sacrifices on agricultural policy reforms as soon as the general election is over.

Italian Premier Bettino Craxi made it clear that the Community's southern members will be expecting the "northerners" to finance a 1987 budget deficit (a deficit from which southerners derive scant benefit) likely to amount to DM8bn.

A similar argument seems a foregone conclusion in 1988. New financial provisions will require the approval of all 12 parliaments, which is unlikely to be forthcoming in time.

Chancellor Kohl is rightly worried that this Gordian knot may need severing in 1988 when Bonn is next in the chair and require the Federal Republic to be ready to compromise.

The European Commission is partly to blame, having begun far too late to mull over possible new financial arrangements.

The Commission's tardiness has been indirectly encouraged by ill-advised consideration for the German general election campaign and for Mrs Thatcher's desire to end Britain's chairmanship of the Community on a conflict-free note at a harmonious London summit.

Besides, all member-governments tend to view Community problems as a secondary aspect of whatever domestic political requirements they may happen to have.

Only the heads of government them-

Continued on page 4

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The 12 European Community leaders at Buckingham Palace with the Queen.
(Photo: dpa)



(Cartoon: Horst Haitzinger/Nordwest Zeitung)

Nato defence ministers clear on aims

The 14 Nato Defence Ministers showed an unusual unanimity when they met in Brussels to clarify their views about the disarmament proposals at the Reykjavik summit.

The 14, representing all member countries except France and Iceland, are prepared to back disarmament moves in the nuclear and conventional sectors but not to dispense with the flexible response strategy of which the nuclear deterrent has been a mainstay for 20 years.

They also have no intention of accepting the Soviet linkage of progress on medium-range missile talks with progress in other sectors — meaning SDI.

That would indeed lead to the talks grinding to a halt, which the Soviet leader presumably doesn't want any more than the West does.

The zero option envisaged in the intermediate-range nuclear sector will not be total in the West, Nato Defence Ministers having definitely called on Britain and France to maintain their nuclear deterrents and advocated clear ceilings for short-range missiles.

This attitude must be seen against the background of the West's realisation that it cannot uphold its deterrent by conventional weapons alone — unless agreement is reached at some stage or other on conventional force reductions.

Safeguarding peace and freedom by means of Western defence strategy and the aim of war never being waged again have been stressed at several Nato spring and winter conferences.

Reiterating them can do no harm. It will remind people time and again that they owe their security mainly to the North Atlantic pact.

Helmut J. Weiand

(Rheinische Post, Düsseldorf, 6 December 19

■ WORLD AFFAIRS

Reykjavik shows up need for new Nato nuclear strategy

The writer of this article, Walther Stützle, is director of the Stockholm International Peace Research Institute.



Since the Reykjavik summit many members of the Atlantic alliance have felt deeply shaken.

Some fear President Reagan, short-sighted and lacking the courage and vision that distinguish statesmen from mere politicians, may have missed a historic opportunity of an advance towards nuclear disarmament.

Both sides have an insane number of nuclear weapons, a total of more than 50,000 warheads stockpiled.

But no one has yet come up with an answer to the difficult question of how safe a world would be that had: a) scrapped its stockpiles of nuclear weapons, but b) not scrapped the know-how to make them again when at will.

Others feel President Reagan ought never to have gone so far with his nuclear disarmament ideas, if only because of the relative numerical weakness of Western conventional forces.

Leading military policymakers such as Bonn Defence Minister Manfred Wörner and Nato's SACEUR, US General Bernard W. Rogers, have publicly spoken out in favour of the latter view.

Yet both fielded arguments against President Reagan's position in Reykjavik that cannot simply be taken as read. Quite the opposite, no-one who has followed the debate can fail to have been surprised.

The claim that a zero option for intermediate-range nuclear missiles is out of the question on account of the imbalance in short-range nuclear weapons and conventional forces is based on a threefold misconception.

First, the zero option formed part of Nato's dual-track decision from the outset. The pact's shrewd and politically experienced secretary-general, Lord Carrington, rightly — if cautiously — recalled this in an address to the Atlantic Institute in Brussels.

Second, the debate on one-sided Soviet advantages in short-range nuclear missiles must not forget that Mr Gorbachov did not insist in Reykjavik on including British and French nuclear forces in the proposed cuts.

Yet the Anglo-French deterrent more than offsets Soviet advantages in the short-range sector.

Third, nuclear weapons, regardless of their range, cannot ever offset or make up for defects in conventional defence.

Many in the Western alliance regularly assume that they can. This is to avoid the intellectual and material consequences of further reflection.

But it is an assumption that is a momentous misconception for Western defence policy.

Since the days of John F. Kennedy no US President has tired of reminding America's allies in Western Europe that nuclear weapons cannot be a substitute for inadequate conventional defence precautions.

Western Europe can hardly expect an American President to order the use of nuclear weapons and jeopardise US survival merely because Europe has failed to redress the balance of conventional forces between East and West.

Mr Reagan's attempt to enlist the *Soviet leader's support in Reykjavik* for progress toward a world free of nuclear arms made this basic truth most topical once more at one fell swoop.

Many of America's allies are shocked. Many have sought refuge in warning or appealing to Washington, on the basis of ill-founded arguments, not to withdraw US missiles from Europe whatever happens.

Experience has shown that neither Congress nor the White House will be in the least impressed by such lamentations. It is high time Western Europeans took up the issue in earnest.

The time is ripe, and not just because President Reagan's policy forces them to do so. It is also ripe because the conventional balance of power is now on the agenda of East-West talks.

The first round of the Stockholm conference on confidence-building measures and disarmament in Europe came to a successful conclusion in September.

The package of confidence-building measures agreed is to be followed by others in a second round of talks, enriched by initial agreements on conventional troop limitation and reduction.

It is not yet clear what line the West proposes to take in the negotiations. A wide range of difficult conceptual questions has yet to be answered.

Ought talks to deal with all armed forces from the Atlantic to the Urals or should they be limited to a specific area? Should they cover manpower and equipment or just one or the other? Are all conventional weapons up for discussion or just some, such as tanks, aircraft and artillery?

Are talks to be held between Nato and the Warsaw Pact to the exclusion of France, Spain and the neutrals and non-aligned, or should the 33 European states plus the United States and Canada continue to confer?

Whatever conclusions the Atlantic alliance may reach, it cannot avoid arriving at conclusions on two key issues: how strong does it realistically estimate Warsaw Pact conventional defence capacity to be and how strong must its own be to strike a balance?

Given the lesson to be learnt from Reykjavik it must be clear that nuclear weapons can no longer be counted as an inexpensive substitute for adequate conventional defence.

This long overdue reappraisal by Western Europe could also make a substantial contribution toward launching an urgently needed process of reconciliation with sceptics in the West who rightly reject the threat of early use of nuclear weapons.

Unless the new strategy meets with their approval the alliance will not in the long term be able to maintain its political authority.

Walther Stützle
(Deutsches Allgemeines Sonntagsblatt, Hamburg, 7 December 1986)

Reagan and Gorbachov
How the power blocs line up

	Nato	Warsaw Pact
Population 1985 in millions	637	390
Economic performance 1984 in billions of $ (Gross domestic product)	6430	2760
Expenditure on arms 1984 in billions of $	348	272*

© Globus 6824 * estimate

The ABC of a disarmament dilemma

Nothing has been the same in Nato since the US-Soviet summit in Reykjavik. President Reagan having approved in principle Mr Gorbachov's *breathtaking disarmament proposals*, Nato faces more than one disarmament dilemma of its own making.

A dilemma for which politicians, not the military, are to blame, Reykjavik has triggered the first serious debate on a new strategy for the 16 Nato states since the flexible response strategy was adopted in 1967.

Nato Defence and Foreign Ministers, meeting at separate gatherings in Brussels, are about to attempt to agree on post-Reykjavik policy and, so Nato diplomats say, maintain appearances of harmony and solidarity.

The disarmament dilemma Nato has brought upon itself is more easily explained than solved.

It is that Mr Gorbachov has proposed to the United States the "zero option" of scrapping intermediate-range nuclear missiles in Europe that Nato has advocated in vain since 1979, seemingly safe in assuming that the other side was opposed to it.

Nato offered to withdraw American Pershing 2 and cruise missiles from Europe in return for a total withdrawal of Soviet SS-20s.

Nato governments constantly proclaimed their readiness to accept this "zero option."

In what had often been an impassioned public debate the stationing of SS-20s, with a range of 5,000km, was said to have been the decisive reason for Western missile deployment.

The Soviet leader's surprise acceptance of this Western demand has forced sudden and painful realisations on Nato. One point it has brought home is that missile deployment was not merely a response to the SS-20s.

The withdrawal of America's cruise missiles, with a range of 2,500km, and Pershing 2s, with a range of 1,800km, would arguably make a crucial inroad on the West's nuclear deterrent capacity.

This particularly worries Britain, France and Germany in view of Soviet superiority in short-range (below 1,000km) nuclear missiles, in conventional Warsaw Pact forces and in enormous stockpiles of chemical weapons.

Nato's Supreme Allied Commander Europe, US General Bernard W. Rogers, and his German deputy, General Hans Joachim Mack, have sounded uncommonly harsh public criticism of the risks posed by a zero option.

The chairman of Nato's military committee, General Wolfgang Altenburg of the German Bundeswehr, has also warned against disarmament agreements that commit the West to existing imbalances.

The military are worried partly by Soviet SS-21 and SS-22 missiles that have been stationed closer to the border with the West since Nato's missile deployment and partly by the latest SS-23s, with a range of 500km, deployed by the Russians since last year.

These worries are underlaid by fears that total abolition of medium-range missiles in Europe might mean the end of Nato's present flexible response strategy.

This brings the debate back to the real reason for the stationing in Europe of intermediate-range US missiles capable of reaching targets in the Soviet Union.

It is that the United States is unlikely to use its intercontinental ballistic missiles against the Soviet Union in response to an attack on Europe and not on America itself.

It is unlikely to do so because America could be sure of nuclear destruction as a result.

Medium-range missiles were thus aimed at ensuring the Soviet Union could not feel confident of a sanctuary and dissuading it from a "limited" attack on Europe.

After their public reminder of this original reason for Nato missile deployment General Rogers and General Mack were promptly rebuked and told that policy was for politicians to make.

"With politicians for years having called for the zero option there can no longer be any alternative after Reykjavik," said a high-ranking Nato diplomat.

In the short term the crucial issue for Nato is how closely the United States can link an intermediate-range agreement with talks on short-range "parity" and a balance in conventional forces in Europe.

America, evidently surprised by its allies' misgivings, has repeatedly stressed this link since Reykjavik.

In the longer term, or so many Nato diplomats feel, the strategic conclusions the Atlantic alliance must reach will be more significant.

What conclusions must Nato reach for its flexible (nuclear) response strategy from the abolition of intermediate-range nuclear forces and the possible abolition of strategic missiles? So far the answers are far from clear.

Dieter Ebeling/dpa
(Saarbrücker Zeitung, 3 December 1986)

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■ THE EUROPEAN COMMUNITY

Nervous coughing over old Turkish-access promise

Twenty-three years go no-one in the original six-member European Economic Community spared a thought for the Anatolian masses. In booming economies Common Market employers welcomed any extra manpower.

In the summer of 1963 Chancellor Adenauer approved a treaty of association with Turkey that came into force a year later.

A key feature of the arrangement, which was a logical consequence of the association treaty with Greece, was its guarantee that Turkish workers would enjoy total freedom to settle and work in all European Community countries from December 1986.

But just as the Community manoeuvred itself into a tricky position by guaranteeing to buy unlimited amounts of farm produce at a fixed, high price, so it has miscalculated its pledge to Turkey.

In the wake of the 1973 and 1979 oil price shocks, which more than quadrupled fuel prices, European economies took a buffeting from which they have been slow to recover.

Twenty-three years ago there was a brisk demand for manpower. Not so today, and certainly not for unskilled workers, as latest unemployment figures for the 12 European Community countries clearly show.

Luxembourg statistics put the number of people out of work in the Community at roughly 15.7 million. Automation has made such headway in the past two decades that manpower requirements have been curbed despite full order books.

So the Community is now twisting and turning like an ornamental Turkish snake under the burden of its association commitment.

The Federal Republic of Germany, where 1.4 million Turkish migrant workers have already set up a second home, is particularly keen not to let in more Turks.

Fears of too much alien influence and, particularly, of Turkish competition for scarce jobs are the main arguments against unlimited access for migrants from Anatolia.

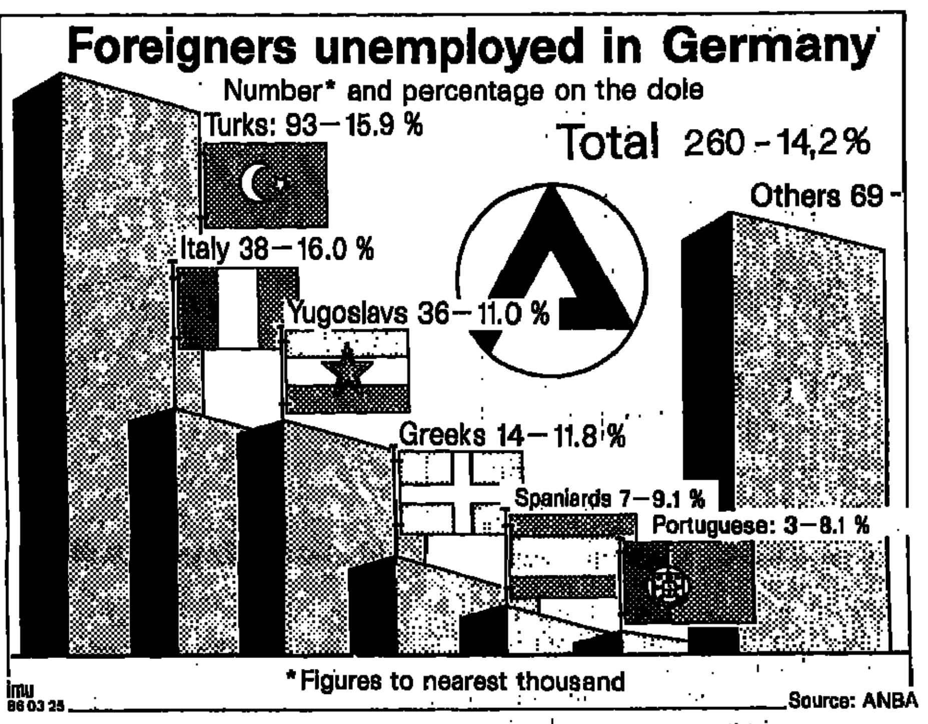
At European Commission headquarters in Brussels no-one is saying so unofficially, let alone officially, but on the quiet Eurocrats would have been happier if the Turkish military regime had not been replaced by a democratic system.

The Turkish government headed by Premier Turgut Özal can now fairly call on the European Community to abide by its commitment to allow Turkish citizens freedom of access to live and work in Common Market countries.

He can also insist on the Community providing financial assistance pledged but frozen during military rule.

Last not least, he can submit a Turkish application to join the European

Continued on page 6



Ankara determined to go ahead with membership application

Turkey is determined to apply for full membership of the European Community. A special Ministry of State has been set up to handle relations with the European Community.

But Yilidirim Keskin, special adviser to the new minister, Professor Bozer, is not saying when Turkey plans to apply.

The Prime Minister, Turgut Özal, was vague when he spoke to the North Atlantic Assembly in Istanbul: the application would be submitted at the "most suitable moment".

It remains to be seen whether that will be this year or next.

At the European Commission in Brussels, officials would prefer Ankara to take its time. So would member-governments in Bonn and other Community capitals.

The general feeling in the European Community is that neither side will be ready for union in the foreseeable future.

Turkey won't because, as sober appraisal shows, political and economic prerequisites for accession have yet to be met.

The Community isn't because it has yet to digest the doubling of its initial membership from six to 12 member-countries, including Spain and Portugal, who joined only last January.

Besides, Europe still faces enormous agricultural and financial problems.

Realists in Brussels feel the Community will not be in a fit state for further expansion before the turn of the century.

They also doubt whether Turkey, with a total surface area of 780,576 square kilometres, of which only 23,623 is in Europe, is really suited for European Community membership.

This doesn't worry the Turks. They are planning with the year 2000 in mind. They realise that Spain and Portugal applied for membership in 1977 and didn't join the Community until 1986, after protracted negotiations.

Spain and Portugal have also been granted several years' grace before full integration.

Turkey, with a current population of about 50 million, is expecting membership talks and transitional arrangements to last even longer.

So it will doubtless be a while before the Turkish flag, red with a white crescent and star, flies alongside the flags of the Twelve and the European flag outside the Commission's Brussels headquarters.

The Turkish flag already flies outside the Palais de l'Europe in Strasbourg, where Ankara is about to take over for six months in the chair at the Council of Europe.

Premier Özal plans to use this opportunity to the full. He badly needs both domestic and foreign policy successes.

The next general election is in autumn 1988. At the end of 1983 his Motherland Party came to power with roughly 45 per cent of the votes and *211 seats in the Turkish parliament.*

It was the beginning of a new era. General Evren, who had ruled the country since a military coup in September 1980, had been head of state since November 1982 when a new constitution came into force.

Mr Özal's party took a drubbing in mid-term elections last September. Previously banned Opposition parties are making a comeback. His most serious rival is the conservative Justice Party led by past Premier Süleyman Demirel.

Mr Demirel is expected to be well in the running by the next general election. Some Turks are dissatisfied with Mr Özal's programme of political and economic reforms.

He and Foreign Minister Vahit Halefoglu meanwhile untiringly reiterate their commitment to Europe, to democracy and to the observation of human rights.

Bremer Nachrichten

In mid-September, when the joint association council met in Brussels for the first time in six years at Foreign Minister level, Mr Halefoglu stressed that Turkey was part of the Western world and wanted to become a member of the family.

Premier Özal and Foreign Minister Halefoglu have appealed to their partners in the European Community and Nato allies to step up economic and military aid.

They mainly have in mind the United States and the Federal Republic of Germany as the most powerful members of both pacts in economic terms.

Hans-Peter Ott
(Bremer Nachrichten, 24 November 1986)

■ GERMANY

East Berlin opens the gates a little

STUTTGARTER ZEITUNG

East Berlin is making it not quite so hard for people to get temporary exit visas. By the end of the year, between 200,000 and 300,000 East Germans will have visited the Federal Republic — the largest number since the Wall was built in 1961.

Exit visas are most readily granted for "urgent family" reasons. The East Berlin regime is now interpreting the words "urgent" and "family" broadly.

Roughly 20,000 people will have received permanent exit permits and between 4,000 and 5,000 young East Germans will have visited the Federal Republic by 31 December — an unusually high figure. (Old people, especially pensioners and the ill, usually find it the easiest to get exit visas).

There is mounting pressure for a more exit visas to be issued. Members of the East German peace movement are openly demanding greater overall freedom and freedom of movement.

They are not afraid to put their names and addresses on public petitions.

During the past month there have been almost daily reports of attempts to flee from East Germany.

One man was shot dead after almost getting over the Berlin Wall. This is said to be the first "wall death" caused by firearms in the 1980s and the 75th since the wall was built on 13 August, 1961.

Post-war developments within East Germany explain why the pressure for more freedom of movement is growing.

Hardly anyone recalls the case of the secondary-school pupil Hermann Joseph Flade who was sentenced to death for just printing and distributing a few leaflets in 1951. His life was spared following international protest.

A university chaplain from Leipzig by the name of Siegfried Schmutzler was sentenced to five years imprisonment because of the "illegal formation of a group" for something which is more or less taken for granted in every religious peace group in East Germany today: critical discussion.

Ten years ago the East Berlin state security service apparently still believed that it only needed to clench its fist and squeeze tightly to come to terms with dissidents such as Robert Havemann and Wolf Biermann.

An authority on East Germany, Karl Fricke, explained the East German authorities pursued this policy without ever thinking that precisely these repressions would produce new opposition.

Fricke is the author of a detailed report on the evolution of the East German state.

He says the transition from isolated to collective opposition can be traced back to the 1970s and is shown by individual cases.

Such as the case of a senior surgeon in a country hospital in East Germany who lost his job after applying for an exit permit, but gained widespread solidarity.

"The young and up until then unnoticed colleague who publicly expressed his deep respect for our action. The nurse who complained that her husband was not courageous enough to risk a similar move..."

Or the case of the author Sigmar Faust, for whom thirteen years ago forty-five East German citizens cited the UN Convention for the Protection of Human Rights after he was refused an exit permit.

During the 1980s there have been more frequent manifestations of protest in the form of public appeals for disarmament in both East and West or the campaign against the introduction of compulsory military conscription for East German women in 1982.

During this campaign peace groups repeatedly took to the streets with their banners despite the threat of punishment or imprisonment for "hooliganism", "forming a group" or "establishing illegal contacts".

Dozens of campaigners were arrested and deported.

All attempts to limit opposition have merely broadened its basis. Although the anger may not have grown over the years, the courage has. The Helsinki CSCE accords appears to have played a crucial role.

Many people are now demanding and not just requesting a right to travel freely.

The East Berlin authorities have long since accepted the fact that applications by East Germans to leave the country are also at least possible in principle.

Fricke and other experts estimate the number of applications at between 200,000 and 500,000.

During 1986 many churchgoers in East Germany have accused church leaders of conforming to the demands made by the state.

Nevertheless, religious groups have more freedom now than many thought possible ten years ago.

The Socialist Unity Party (SED) is also so far from being united.

One SED official, who was high-ranking enough to be entitled to travel to the West, referred to intense discussions within the party over freedom of speech and movement during his visit to West Berlin.

He explained how an official clampdown on such discussions often leads to resignation and in the end to an attempt to flee the country.

There are increasingly frequent reports of conscientious objection and of refusals by recruits to swear the oath of allegiance to the state.

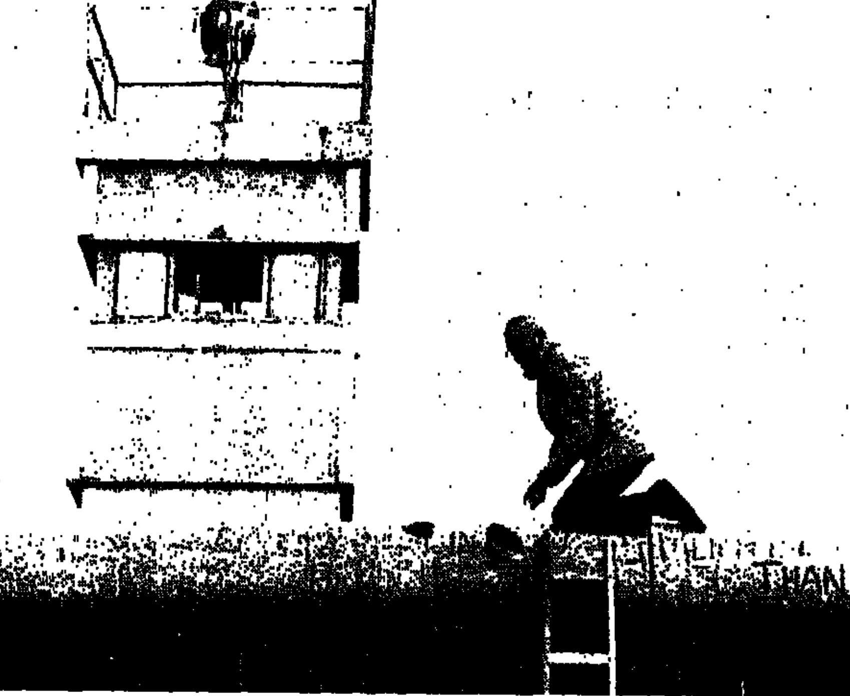
There are also growing signs that the number of flight attempts during which East German border guards failed to hit their target is by no means connected with any moderation of the order to shoot anyone trying to flee.

After an East German was shot by a burst of machine-gun fire during an attempt to scale the Berlin wall in the district of Frohnau one East German border guard spontaneously threw down his cap and despairingly shouted "Shit! Shit!".

He didn't seem to worry when he was disarmed and led away by his fellow guards.

Otto Jörg Weis

(Stuttgarter Zeitung, 29 November 1986)



The Wall buster: John Runnings at war with East Germany. (Photo: dpa)

One man's fight to smash the Wall to pieces

John Runnings has a thing about international borders. The 69-year-old former joiner from Seattle says passports and borders prevent peace, freedom and justice.

The target of his latest campaign is the Berlin Wall. His inspiration came after seeing a film about it on American television. So, in May, he booked into a Berlin hotel by the Wall for 10 marks a night and went into action.

He has attacked it seven times; he has broken holes in it, climbed over it, organised a urination event against it, and defied border defences by running through the Checkpoint Charly crossover point. He is still alive and well enough to tell the tale.

The East German guards keep arresting him and bringing him back to the West. Now he has been warned by the American Embassy in East Berlin that the regime in the East is getting fed up with him.

But his resolve remains: to destroy the Wall in front of an international public.

His latest strike was last month. "Boys, I'm coming," said the thin, white-bearded crusader as he manoeuvred his home-made ladder against the Wall, climbed on to it and knocked a hole in it with a hammer. Usual procedure — he was arrested by the border guards.

Runnings regards himself as a Gandhi-style campaigner for peace. His first action to hit the Wall in May went virtually unnoticed — he invited everybody in the city to join him in a massive urination-against-the-Wall operation.

Kölner Stadt-Anzeiger

But he was the only one to turn up — with an umbrella in the pouring rain. He was arrested before putting his plan into action.

He has been busy ever since. Neither the East Berlin authorities nor the American Embassy in East Berlin know what to do.

Perhaps the only solution is that hinted at by Runnings himself when he said: "If they use force to bring me back to Seattle, then I won't come back. But I will continue the campaign for peace in the United States."

Birgit Loff

(Kölner Stadt-Anzeiger, Cologne, 22 November 1986)

Continued from page 1

selves can possibly be under any delusion as to public opinion in member-countries being impressed by their decisions on fighting terrorism, on narcotics, cancer and Aids, on economically-motivated applicants for political asylum and on illegal immigrants.

If President Reagan's domestic difficulties gain further momentum and European Community governments continue to fool around, there will be no making good the time wasted in London on superfluous topics.

Erich Hauser

(Frankfurter Rundschau, 8 December 1986)

Shoot to kill still the order of the day at the border

Last year 160 people fled from East Germany. By the end of October this year, 172 had already bolted, 50 alone in October.

It shows that the sophisticated and expensive border barriers are not impenetrable, even though they are still extremely dangerous.

Reports at the end of November made it clear that the order given to East German guards to shoot people trying to flee has not been dropped.

One man trying to escape from one part of Germany to another in Berlin probably died during the attempt.

Why the border authorities keep on shooting to kill is still a matter of conjecture.

The large number of successful attempts to get out have probably persuaded the authorities to increase deterrence.



Many border guards are known to prefer to shoot to miss or not to shoot at all. But that is risky for the guards. If they are discovered, penalties are harsh.

But East Berlin is also bound to suffer if it continues this policy.

Each shooting incident on the border strains intra-German relations and jeopardises the regulations drawn up between the two countries.

East Berlin should also bear this in mind if it believes that it can disregard human rights.

Rudolf Grosskopff

(Deutsches Allgemeines Sonntagsblatt, Hamburg, 30 November 1986)

■ ANNIVERSARIES

Berlin and its East-West role: need to get rid of smokescreen terminology

This is the second of a two-part article written by the Mayor of Berlin, Eberhard Diepgen, for the German foreign affairs periodical, *Aussenpolitik*, to mark the city's 750th anniversary next year. The first part appeared last week.

AUSSEN POLITIK

Even though Berlin policy and *Deutschlandpolitik* need a component that is more than hitherto addressed to the West, relations with the East still remain the other significant element.

Our second interest as seen from the vantage point of Berlin — apart from intensifying ties to the West — is the quest for good relations with the East which, in its true sense, is not the East but the centre of Europe: the GDR, Poland, Czechoslovakia plus the other East Bloc countries and, not least, the Soviet Union. We are interested in good relations between our systems despite all differences on fundamentals which we must not and may not gloss over. But just as for us there would be no chance of freedom without security, there would in the long run be no chance of unity without détente with the East.

Here, I would like to address an appeal to German domestic policy. We are much too prone to succumb to an East-West terminological hysteria. We engage in fierce disputes over terms without knowing their substance. One example out of many: the term new or second phase of détente policy. For some this is a blessing: for others it is a curse. In reality, it is either banal because every political development takes place in phases or what is meant is an entirely different policy, i.e. a bloc-transcending West-East policy of which one simply does not dare speak openly or at least intimate its ultimate objective. What I want is to see Berlin policy and *Deutschlandpolitik* shed such smokescreen terminology and generally to linguistically de-dramatise this policy and make it more pragmatic and operative. Ultimately, it is tangible interests that determine policy. These interests usually do not change or do so only in the long term, or in any event not at the rate scholarly authors invent new terminology shells. A semantic trick may sometimes be helpful in communiqués, but it is mostly not conducive to the credibility of practical action.

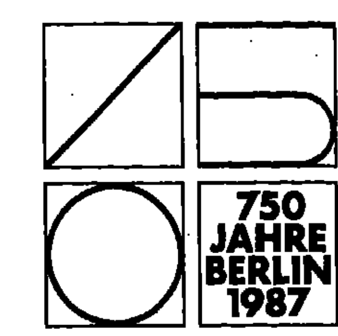
Berlin (West) is geographically closest to the GDR. This imposes an important task on us. We must take the GDR seriously in all respects, including its wish to cooperate and its need to fence itself off. We in Berlin are in the best position to absorb, understand and convey what is being thought and felt beyond the Wall by the functionaries and by the people. This is the best policy with which to preserve the oneness of the nation and at the same time it is a constructive approach for *Deutschlandpolitik*. And since it is here that this is particularly felt, Berlin is also the best vantage point from which to appreciate the constructive contributions the GDR can make to East-West relations, knowing very well that in doing so it acts in its own interests and in those of the Warsaw Pact as a whole.

Unlike with issues of power, ideology and security, there is a new dynamism in almost all other East-West issues. East and West will have to weather new challenges. I would like to mention a few examples: Environmental pollution respects no walls or borders. Environment consciousness among the public is growing on both sides, and so is the need to take action. East and West depend on dynamic productivity. Waste removal problems and recycling opportunities are gaining in weight and could be shared by East and West. A gainful transfer of technology also promotes East-West meshing and is certain to do so more efficiently than a one-way transfer through espionage. Modern transport, tourism, comprehensive East- and long-distance communication services and ranges of the media, inclusive of their service opportunities, call for at least a European scale. Both West and East are plagued by civilisation diseases and they have to deal with the problems of city planning and its social consequences. Health problems of a new kind — allergies, narcotics, Aids — are on the rise in both West and East. Problems in connection with the fact that the North of the world is faced with growing demands by the South are also gaining in significance. Even in such ideology-related sectors as cultural and social processes, there are similar phenomena in East and West, among them the search for transcendence and history, the loss of the feeling of being sheltered, dropping out, nihilism, alienation and ossification.

All these are issues that occupy society in both East and West. Thus there are large areas of parallel and corresponding development. This development provides many hitherto unused opportunities for an active *Ostpolitik* by the West — opportunities and indeed necessities of cooperation that would benefit both sides, all their divergencies notwithstanding. Focussing Berlin policy and *Deutschlandpolitik* on these issues engenders dynamism. Conversely, anybody who insists on virtually insoluble positions of principle makes his own policy rigid and supplies the other side with arguments against moving towards us. The constant fruitless discussions of the citizenship issue are a good example in this context.

The GDR attaches great importance to conducting its policy towards the West under the label of "peace policy". This is correct inasmuch as the opposite of a peace-oriented *Deutschlandpolitik* does not and may not exist. What is more, Berlin policy and *Deutschlandpolitik* are invariably also a contribution towards peace policy. In fact, even the Federal Republic of Germany's Constitution stipulates this in its preamble which states that the German people "are possessed of the will to serve world peace as an equal member of a united Europe". Article 5 of the Basic Treaty also contains the commitment by the Federal Republic of Germany and the GDR to promote peaceful relations among the nations of Europe, to contribute to security and cooperation in Europe and to support efforts at disarmament. I see no difficulty in putting more emphasis than hitherto on this in our *Deutchlandpolitik*, as long as this does not give rise to any doubts as to our loyalty to the Alliance. The aim of preserving peace in Europe and in the world directly interacts with the aim of developing normal good-neighbourly relations, as the Basic Treaty calls it. Peace spreads from the bottom up. The better German-German relations are, the smaller is the conflict potential and the greater are confidence and the chance of making progress in securing East-West peace in the military and security sectors as well.

The Soviet Union is one of the signatories of the Four-Power Agreement. To this day, it collaborates with our three protective powers in the Allied Air Safety Centre. When looking out of the window of his Embassy on Unter den Linden, the Soviet ambassador to East Berlin faces the Brandenburg Gate, the Soviet cenotaph in the West, the 17th of June Street and the Reichstag building. The USSR to this day calls its troops on GDR territory the "Group of Soviet Troops in Germany". Put in a nutshell, the political presence and the political interests of the four victorious powers in Germany are particularly conspicuous in Berlin. The Soviet Union was always engaged in *Deutschlandpolitik* revolving around Berlin — and not only since the Second World War. It is well aware of Berlin's central importance for the future of Europe. After unsuccessful attempts to exert pressure on Berlin — especially through the 1948/49 blockade and the 1958 Khrushchev ultimatum — the USSR must today also be aware of Berlin's central significance for constructive East-West relations. Conversely, any politician in the Federal Republic of Germany, including Berlin (West), would be well advised never to attempt



a policy towards the East without due consideration for the Soviet Union. There is one thing that must not be forgotten: There are historically deep-rooted apprehensions in the West about excessively close German-German ties; but these apprehensions exist in the Soviet Union as well and are very much stronger there. This superpower still lacks sufficient self-assurance and confidence towards the other Warsaw Pact states. German policy must therefore constantly be explained anew in Moscow. In doing so, our task is to make it clear that it is not the intension of our Berlin policy and *Deutschlandpolitik* to call the GDR's loyalty to its alliance into question. By the same token, we do not want the Soviet Union to call our own alliance loyalty into question.

Good relations with the Soviet Union are in the Germans' national interest. But the Federal Republic of Germany, including Berlin (West), must never permit itself to create the impression that Moscow is politically as close to us as Washington — or that we view them as equidistant. A policy of equidistance would diminish rather than increase our political weight in the Alliance and even more so vis-a-vis the Soviet Union. It could also once more make Berlin the pressure point of Soviet *Westpolitik*. Unity within the Western Alliance is the best guarantee for Berlin's security. This does not preclude differences of views and critical discussions because they are part and parcel of an alliance of free nations. The Soviet Union must always be able to rely on the fact that Berlin will provide impulses for détente, but that any pressure on Berlin will instantly lead to even greater solidarity within the West, and this can hardly be in Moscow's interest.

It is barely 100 kilometres from Berlin to the border between the GDR and Poland. Poles account for the third largest foreign population group in Berlin, and this city has always played a special role in the minds of the Polish people. I therefore want to use the opportunity provided by Berlin's 750th anniversary to stress that German-Polish relations require particular care and sensitivity, which is especially true from the vantage point of Berlin. Article 1 of the December 1970 treaty between the Federal Republic of Germany and the People's Republic of Poland states: "They (the parties to the treaty) reaffirm the inviolability of their existing borders now and in the future and mutually undertake unreservedly to respect each other's territorial integrity. They affirm that they have no territorial claims whatsoever against each other and will not raise such claims in the future". These words are binding, not only contractually but also out of deep conviction. I would welcome it if Article 3 of the treaty were instilled with more vigour than hitherto. It reads: "They (the parties to the treaty) are agreed that an extension of their cooperation regarding economic, scientific, scientific-technological, cultural and other relations is in their mutual interest". Berlin is prepared to make a constructive contribution to that end within the framework of its rights and responsibilities. Neither side should be prevented from doing so by status quo questions under dispute.

Berlin is fully integrated in the legal, economic and social system of the Federal Republic of Germany. What matters even more is that, due to their political understanding of themselves, Berlin and the Berliners regard and may regard themselves as a full member of the superceding community that is the Federal Republic of Germany. After decades during which Berlin was mostly on the receiving end of the federation, it is now time for the city to increasingly become the giver by contributing its experience to the common effort to shape our future. What the Senate wants is to heighten the awareness in the Federal Republic of Germany of the problems and opportunities of a modern metropolis and a modern metropolitan policy and the strength inherent in a many-faceted conurbation, especially when there are no outside resources or an adequate hinterland — in a nutshell: the idea factory Berlin. The city's 750th anniversary in 1987 is an opportunity that will not recur soon. *Deutschlandpolitik* is again a particularly important example of a greater involvement in national affairs. As explained earlier, this policy must not be directed only at West and

Continued on page 6

■ THE ECONOMY

Growth hiccup predicted — then full speed ahead

General-Anzeiger

The annual report and economic forecast of the "Five Wise Men" traditionally forms the last link in the chain of economic forecasts, so they stand the best chance of getting their forecasts right.

They have the most up-to-date economic statistics at their disposal and this year it has been most convenient that the report was not due until November.

The Council of Advisers to the Economic Affairs Ministry, to give them their official name, have had to slightly reduce the growth forecasts made earlier by their fellow-economists.

The slower rate of economic growth export expected next year is already in full swing, so estimates have needed revising.

This has advantages and disadvantages. The drawback is that growth forecast for the year ahead is lower.

The benefit of this dent, as economists see it, is that it will be over sooner than expected.

The economy will regain momentum in the course of 1987 at a time when other economists tended to expect a downturn. So what the Opposition sees as a correction of the Bonn government's growth euphoria is seen, on the basis of the same report, by the Federal government as fully bearing out its policies.

The "Five Wise Men" have indeed given Bonn full marks. Even though unemployment isn't expected to fall below two million in the year ahead the government is said to have done well on employment.

But their urgent warning must not be overlooked. A hardening of the labour market can only be alleviated by pursuing a consistently market-orientated policy, they say.

Examples they cite show market economics to be disregarded in many sectors, ranging from fixed shop opening hours to the European Community's common agricultural policy.

Not for nothing has this year's survey dealt at length with essential reforms, some of which are rightly described as long overdue.

The "Five Wise Men" have again called for substantial tax cuts by 1990 at the latest. On this point the government is unlikely to demur.

Finances are another matter. The council of advisers strongly advise against running up even a penny more in debts to fund tax cuts.

Finance Minister Stoltenberg has in contrast already cautiously hinted that tax cuts as planned may prove impossible without a slight increase in the public sector borrowing requirement.

The experts keep their views very much to themselves on where tax incentives need to be scrapped. They cannot go into details; that is for the politicians to do, and they say they plan to get down to business immediately after the general election.

So the scrapping of subsidies seems likely to be the most explosive financial step in the next legislative period.

There is little point in the clash between government and Opposition over whether the upswing is good or bad. The fact is that the upswing has been sustained for five years and, if the forecasts are right, will continue into a sixth.

A further fact is that structural incrustation of the labour market cannot be solved solely by economic growth. The next government should draw swift conclusions from the experts' report.

The Five Wise Men have not just handed out praise; they have also allocated tasks; some long overdue.

Peter J. Velte

(General-Anzeiger, Bonn, 25 November 1986)

The ups and down of 1985-87

From the autumn reports of the economic research institutes (1986/87 estimates)

	1985	1986	1987
Growth in %	+2.5	3	3
Investment in % (real)	+9.4	8	7.5
Prices in %	+2.2	−0.5	1.5
Disposable income in %	+3.9	4.5	5
Unemployment in millions	2.30	2.23	2.12
Exports in % (real)	+7.3	0.5	3

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Continued from page 3

Community, and the Community would be obliged, by the terms of Article 237 of the Treaty of Rome, to consider a Turkish membership bid.

With the Community on the verge of bankruptcy and yet to digest the accession of Spain and Portugal last January, that would put the Twelve in a very difficult position.

It could, of course, play for time and make the membership negotiations drag on for at least seven and a half years, as it did in Spain's and Portugal's case.

The Turkish government can be sure to make the Community pay for not honouring its pledge. Keeping Turkish workers out is likely to cost member-countries billions, and Bonn will probably have to provide the lion's share.

Two years ago in Ankara Chancellor Kohl rashly promised Premier Özal to equip a Turkish tank division, not realising the bill would be over DM1bn.

The European Commission has since sounded out the possibility of a moratorium, delaying implementation of the Community's pledge by at least 10 years.

Experts have sought to prove that Turkey, with its sociological structure and Islamic traditions, is not really a Western European country — although Kemal Atatürk made this premise the yardstick of his policy.

Community legal experts now plan all manner of stratagems to prove that the freedom of access for Turkish workers promised in the association treaty was intended to be granted gradually and not at one fell swoop this December.

Whatever the facts may be, the European Community is in the process of jeopardising its credibility and its record in honouring treaty commitments.

It can ill afford this adventure in dealings with a country that as a Nato member and by virtue of its geographical location plays a crucial strategic role on the pact's south-eastern flank.

Helmut J. Weiand

(Saarbrücker Zeitung, 26 November 1986)

Continued from page 5

East but also and above all inwardly. We will find understanding for the oneness of the German nation among Germans and particularly abroad only if we succeed in making Berlin policy and *Deutschlandpolitik* more vigorous domestically.

Too few people have concerned themselves with this so far. The specialist lingo of *Deutschlandpolitik* is often overburdened with complicated legal terminology. This makes it appear stilted and construed. Many of our fellow-citizens regard the internal conditions in East Berlin and the GDR as drab and boring. Our knowledge about Germany (East) is inadequate. We must therefore try to arouse a sort of curiosity about the GDR. But this cannot be done by the state alone. What we lack is a *Deutschlandpolitik* deeply and broadly rooted in the social groupings. The churches have already done exemplary work in this respect. Science, schools and universities, sports, tourism, the media, art and culture are called upon to help. We must create a consciousness of the fact that life in the GDR is more intense, alert and aware than we think. In fact, there is perhaps a higher degree of awareness there than here. Often, German traditions are cultivated and receive more attention there than in the West. Among them are music in the family circle, local history, family cohesion and hospitality. German theatre and opera would be poorer without directors such as Alexander Lang and Harry Kupfer from the GDR and East Berlin.

It would be wrong to underestimate or indeed ignore the GDR. It is up to us to stress its role as a German state and to make it interesting in terms of domestic affairs and, of course, also in social policy terms — but above all with an eye to preserving the oneness of the nation. Berlin is called upon when it comes to imparting more life to *Deutschlandpolitik* in domestic affairs. We also consider ourselves the advocates of the people in East Berlin and the GDR — not in terms of intellectual tutelage or representation but as messengers and interpreters. Berlin is thus in a very central sense the capital of the Germans. It can only do justice to this role in solidarity with the whole of the Federal Republic of Germany. But in its function as the capital of the German nation and its common heritage, Berlin regards itself as a giver within the federation.

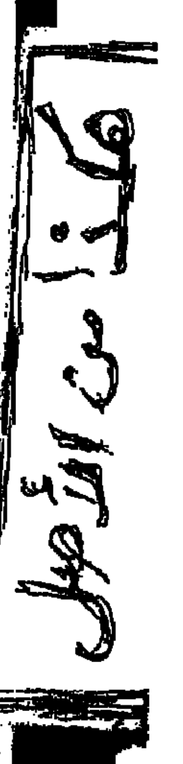
Pragmatic *Deutschlandpolitik* boils down to a policy that forgoes emphasis on contentious fundamentals, concentrating instead on a broadly meshing cooperation between the Federal Republic of Germany and the GDR. This would be most likely to help the people and strengthen the oneness of nation and the role of Berlin. Even if the concept of nation, the consciousness of belonging to one nation and the role of the national states are not historic constants and must always be seen in the context of their time, the awareness of the people in both German states of being part of one nation remains an element of constancy. Even the almost complete elimination from the official vocabulary and the GDR Constitution of the words "Germany" and "German nation" has changed little in this respect. The attempt since 1974 to use the official formulation "nationality: German; citizenship: GDR" as a means of preserving the ethnic-cultural part of the term "nation" and combine it with a new GDR state consciousness is unlikely to have promoted the socialist type of national consciousness the GDR is striving for. It is noteworthy that the party organ of the GDR's SED still has the word "Germany" in its name and indeed that the party itself is still called "Socialist Unity Party of Germany". And is it not quite remarkable that, notwithstanding all fencing off on the nation issue, SED General Secretary Erich Honecker in 1983 (at the height of the debate over the two-track NATO decision) appealed to Chancellor Helmut Kohl "in the name of the German nation" to put his weight behind a specific security policy, even though this was certain to have been propagandistically motivated? A national community need not in all phases of its development geographically coincide with the borders of a state. But historians and some politicians must not be permitted to succeed in defining away the depressing problems inherent in the division of Germany as a reversion to a pluralism of states that is perfectly in keeping with German history. Of course, anybody who regards a liberal democratic system and a system of state socialism as a normal plurality of states in Germany ventures onto the thin ice of a political abstraction and displaces fundamental system-antitheses from his consciousness. Even the historic German pluralism of states never knew such extremes with a simultaneous feeling of oneness as between the two German states. This is most conspicuous in Berlin. Even the Wall demonstrates this: As a power instrument of division it proves to the world at large even after 25 years that there is a yearning for togetherness. Anybody who wants to understand the German situation, the German question and the efforts to arrive at German answers can learn from Berlin. Berlin remains the capital of the Germans.

It is because Berlin (West) is firmly committed to the West and because the West is firmly committed to Berlin and because, at the same time, Berlin is firmly committed to Germany that this city has a future. Berlin as a whole will be 750 years old in 1987. There will be two anniversary programmes, but there will also be common ground between the two halves of the city. Peaceful competition in the divided city, with its two opposing social systems, underscores the differences and contrasts but it can and will at the same time also serve the whole.

It would be good if, looking back at the 750th anniversary in 50 years, it could be said that the opportunities for unity had been made use of despite the division, that new avenues had been explored intellectually, politically, economically and culturally. If, together with our partners, we succeed in this in 1987, the anniversary could become a historic event.

Eberhard Diepgen

(Aussenpolitik, Hamburg, No.4/1986)



■ INNOVATIONS

A postman who found a way to clean dirty water

DIE WELT

A hundred years ago, when the industrial revolution was at its height, all the world admired an inventor, the kind of man who could be sent into the woods with a tin can and come back with a locomotive.

In our times, when environmental protection is the thing, all the world hopes that the boffins will be able to master dust, dirt and poisons, because, despite everything, machines still produce them.

Twelve or thirteen years ago, a postman who became a draughtsman at the water-purification plant locked himself away in his cellar with an old washing-machine.

Ralf F. Piepho, from the town of Bredenbeck am Diester, near Hanover, came up with a system for cleaning waste water heavily impregnated with chemicals, the bane of life for every chemicals plant manager. The effectiveness of his system was astonishing.

Self-educated Piepho's invention could handle varnish sludge, hydraulic oil emulsion containing PCB, liquid manure, even seepages containing dioxine such as was found at the Lower Saxony dump at Müchenhagen.

The secret of Piepho's success was kaolin and absorbit — and his discoveries are well protected. He has taken out more than 50 letters patent.

These were the foundations on which he was able to establish his own company in 1975, which now employs 40.

For the layman his discovery can be explained in this manner: kaolin, ground up finely or absorbit, is used to split up aqueous emulsion containing harmful waste in a chain reaction, separating the water and absorbing the harmful chemical particles into the microscopic pores and capillaries of the minerals. They are then spun into watertight cocoons.

The water remaining is so harmless that it can be pumped directly into rivers or streams, or into a purification plant to produce potable water. Many industrial fims, using the Piepho system, recylce the water for further use in their own systems.

Piepho's chief chemist, Michael Kertess, saw a further possibility of economies by producing raw materials from the retrieved chemical byproducts.

Using the Piepho system liquid manure, produced in considerable quantities in agricultural Lower Saxony, is turned into an odourless fertilizer powder that releases nitrates gradually into the soil. It is good for the soil and does not harm the water table.

Piepho, 47, has been very successful. His company, Piepho Abwassertechnik GmbH, has doubled its turnover every year since it was started — sales are now DM30m. The company has subsidiaries in Italy, Switzerland, the USA and its list of customers includes many renowned names in industry.

He had two ideas that were a long way away from his training as a draughtsman. He is a man who cannot sit still and he pours forth his ideas in a torrent.

He brooded over the blueprints for a purification plant, resolving that biology alone could not achieve everything. Chemical-physical systems would have to be applied to much industrial waste.

Second, when watching a tunnel being built he saw how clay was layered into the water channels of a mountain.

He said: "Then the penny dropped," and he hauled the disused washing machine out of its corner and began his investigations.

But how does an ordinary postman become an industrial designer? Ralf Piepho laughed, scarcely concealing his pride in his achievements.

He was at elementary school in the "bad times" after the war. His teacher urgently advised his father to send his son to high school (Gymnasium), telling him that his son had considerable abilities.

But Piepho's father, also a postman, was more concerned with a secure job for his son, so Ralf began his career behind the counter in the post office in the Hanover suburb of Linden.

When he left the postal service in 1962 he had been able to rise to the postal building department in the Hanover headquarters, because of his considerable talents as a draughtsman.

He went to night school while working in a construction engineering office. Eventually he became a qualified draughtsman. In 1971 he went self-employed and was given work by his previous employers, the construction engineers.

His career from then on was classically American, from office boy to company president.

The first prototype unit for his purification system was built in 1974 at the Volkswagen factory in Salzgitter.

He fitted an oil trap with his system. With the technology of the time the system was constructed to purify grease from cleaning water used on engines, as well as the cooling emulsion used in drilling and grinding.

This waste water was continuously the subject of complaint by environmental protectionists.

His success earned him a three-year contract to supply his system. This was the basis for the foundation of his company, Piepho Abwassertechnik. Today about ten per cent of his turnover is done with the VW workshops.

News about its product percolated through the automobile industry, among workshops, petrol stations and car-washing companies. The system was just as effective with varnish and paint sediment from car spraying sheds.

Paint sludge could be neutralised so that it was no longer an environmental hazard.

In the glass industry his purification accessory contributed to economies in three ways; the costs for waste management, water used in production processes and with raw materials.

Glass particles can be separated from the cooling water used for grinding glass and the particles can be re-cyleed in the glass-smelting process.

The purified water used for grinding, which previously had to be changed and purified once a week, could now remain in the circulation system.

According to Piepho a filter system of this type pays for itself within eighteen months. He said: "Environmental protection must not be expensive. Money can be saved by applying environemental protection measures."

He has customers among the armed services. The naval bases in Wilhelmshaven and Kiel use the Piepho system to purify warships' bilge water. The system is also used in workshops used for degreasing and painting weapons, including military vehicles.

Ralf Piepho said: "On all sides there are calls to protect the North Sea from pollution from shipping. I have valuable know-how for this."

A little while ago the Air Force was horrified to discover that its airfields were impregnated with polychloride biphenyl (PCB) from hydraulic and lube oil used in aircraft turbines.

Piepho now has contracts to clean up six military airfields. "We do not need an advertising campaign," he said. "Word quickly gets around that we have to offer what people need."

The firm is located in Bredenbeck im Deister, near Hanover, in the former residence of barons von Knigge. The building includes the company's laboratories, mixing plant for the "wonder powder" fertilizer and the metalworking shop for prototype units.

The company's offices are under the same roof. The property was built by the royal Hanoverian classical architect Georg Ludwig Lavers. It has been splendidly restored and is now a listed

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Ideas poured in, water poured out. Ralf F. Piepho in front of one of his cleaning systems. (Photo: Manfred Linke/laif)

■ COMPUTERS

Artificial intelligence now more than just a joke

Frankfurter Allgemeine

Artificial intelligence is being studied at several German universities. This aspect of computer science is only about 30 years old and used to be a bit of a joke. Not any more.

Last year the DFG scientific research association launched an artificial intelligence research project at Kaiserslautern, Karlsruhe and Saarbrücken universities and the Fraunhofer Information and Data Processing Institute, Karlsruhe.

Computer manufacturers are also taking a closer look at it.

Artificial intelligence now even qualifies for a set of initials, KI (AI in English). AI research sets itself the task of gradually teaching a computer certain human abilities, such as understanding spoken language, proving mathematical principles, recognising certain objects and, say, making travel arrangements.

As all these examples call for intelligence there is justification in referring, in the abstract, to artificial intelligence.

The various applications share certain problem-solving procedures, such as using specific AI computer languages (Lisp or Prolog, say) for easier programming.

The use of a suitable computer language alone, of course, does not constitute AI.

Special interest is being shown in expert systems. These are programming systems capable of performing tasks previously done only by humans.

One of the first such systems was Dendral, devised in the late 1970s, which draws inferences on molecular structure from mass spectrum analysis.

Medical diagnosis is another classic sector. A system developed in the United States, Mycin, can diagnose certain bacteriological complaints with expert accuracy.

Research is in progress in Germany, where special mention must be made of the Society for Mathematics and Data Processing (GMD), of Nixdorf and Siemens and, above all, of Kaiserslautern University.

One of the products of research at Kaiserslautern is the MED2 expert system "shell." It was originally devised for internal medicine but its medical data base can be replaced by another that diagnoses engine performance and failure.

The mechanism that controls the conclusions reached by the computer system is the same in both cases.

Despite their fascinating possibilities expert systems still have fundamental shortcomings. Their "thought capacity" is strictly limited to their data base. They totally lack both an awareness of their limitations and general common sense.

This is one of the most serious fundamental problems AI research faces, providing critics with an ever-ready opportunity to argue that genuine AI is impossible (an argument that has triggered furious philosophical debate).

An AI application closely related to expert systems is the proving of mathematical theorems by computer using so-called deduction systems.

They are based on mathematical logic, deducing the theorem from a number of axioms.

Assuming, for instance, that the Sun is shining (axiom 1) and that it is always daytime when the Sun shines (A leads to B), then it follows that it must be daytime (axiom B).

The difficulty with such mathematical theorems is that in practice a wide range of deductions can be reached. The problem is how to sort out the ones that will arrive at the desired result as fast as possible.

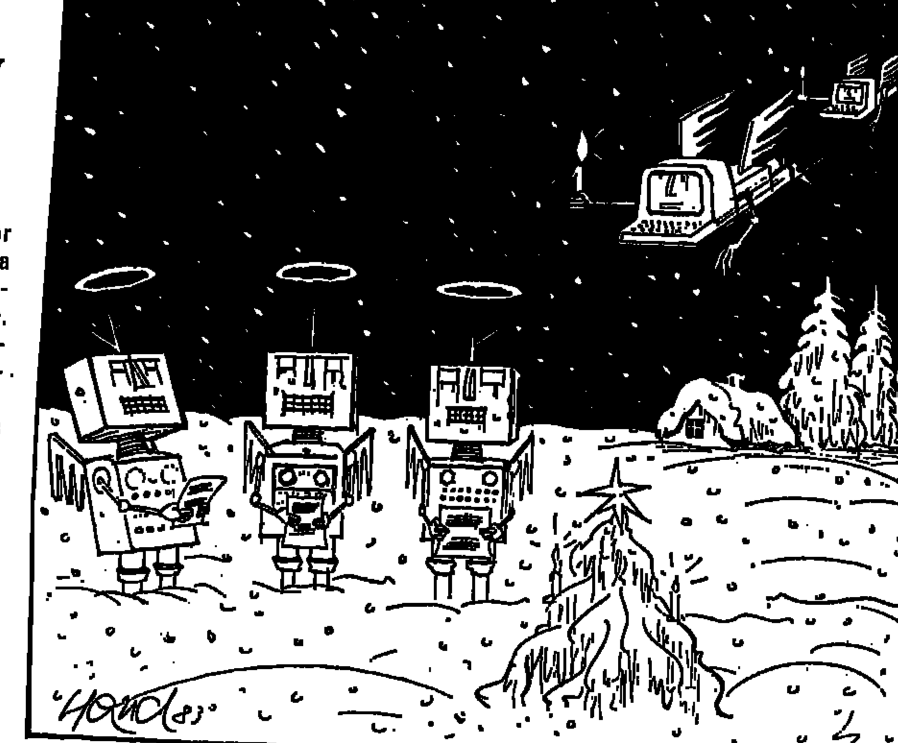
One of the most efficient systems of this kind, first devised in Karlsruhe and now at Kaiserslautern, is the Markgraf Karl Refutation Procedure, named after the founder of mediaeval Karlsruhe.

Initially devised strictly for research use, the procedure has since been put to a range of practical uses.

Deduction systems of this kind can, for instance, be used to verify that computer circuits or programmes are fault-free.

For several years the procedure has also been reversed. Many research scientists are now probing ways of programming straight into logic. The best-known logic programming languages is Prolog — made in Europe, incidentally.

Common sense in its computer connotations poses problems in understanding spoken language too. Unlike mathematical logic, the spoken word involves an abundance of ambiguities requiring the background knowledge of "common sense."



(Cartoon: Hanel/Frankfurter Allgemeine Zeitung)

Take the two sentences: "We bought the boys apples because they were so hungry" and "We bought the boys apples because they were so cheap."

How is the computer to know that "cheap" refers to the apples whereas "hungry" refers to the boys? As a general rule it would need to have an enormous fund of general knowledge on which to base a decision in favour of one or the other.

Yet substantial headway has been made in this sector. In Germany the Hamburg speech partner model has made a name for itself, the aim being to try, as a hotel manager, to provide a customer with a room.

More recent research projects aim at handling increasingly complicated situations.

Programmes of this kind naturally understand language by means of an internal computer outline of the speech situation.

Converting the spoken word into computer language additionally involves the extremely complex problem of processing acoustic signals that vary substantially from speaker to speaker.

Other uses include photo evaluation and robot technology, and people often only realise when they analyse the difficulties that arise in understanding photos how complex and ingenious human vision is.

Various levels of computer vision are distinguished. First, the computer must identify lines and later figures from a multitude of dots on a video screen.

Then it must associate them with known objects. This is done by the human eye in next to no time when we see and recognise, say, a motor-car.

Computers still take much longer. But they have a wide range of possible uses in medicine and the military sector in evaluating X-ray and aerial photos.

Today's industrial robots can hardly be said to possess intelligence of their own, but the use of various AI techniques should soon make possible machines with a limited "mind" of their own.

Classic mechanical engineering will need to face fresh tasks if it is not to forfeit its economic competitiveness, but research in Germany is still in its early days.

There are plans at the Ministry of Research and Technology in Bonn to set up a central AI research facility, partly to face this long-term economic challenge and partly to draw level with overseas competition.

All areas of artificial intelligence basically share two new features:

- First, problems for solution are represented symbolically in the computer.
- Second, knowledge is stored not just as facts but as "regulations," as it were.

The combination of the two makes computer programmes possible that can do more than they have been programmed to do. Computers are starting to "think" for themselves.

Martin Weigele

(Frankfurter Allgemeine Zeitung für Deutschland, 3 December 1986)

■ RESEARCH

A volcano gives hints before it blows its top — but they must be read

General-Anzeiger

Volcanoes give clear warnings before eruption. First, there are slight tremors. Then the mountain changes shape.

More gas than usual is released. Surface temperatures increase and minor steam explosions occur.

If these signs are correctly interpreted, people can be evacuated in time.

The eruption of Nevado del Ruiz in Colombia, which killed 20,000 people, was preceded by enough warning signs.

Bochum University volcanologist Hans-Ulrich Schmincke says there are false alarms. But there are also so many different signs that they need only be correctly interpreted to save lives.

There are enough examples of mass evacuation from both the real thing and because of false alarms.

On Guadeloupe in the West Indies 72,000 people were evacuated in 1976 because it was thought the Sourière was about to erupt. Ten years later, it still hasn't erupted.

But when Mount St Helens in the United States erupted in 1980, there were only 60 deaths because the area had been quickly evacuated. Some died because they ignored the warnings.

There are 530 known active volcanoes. Eighty per cent are in so-called subduction zones where oceanic plates of the earth's crust are pushed beneath continental plates.

This process is triggered by mid-ocean divides into which magma constantly pours, adding to the oceanic plates and pushing older sections of them toward the continents.

There they are pushed beneath the continental plates and melt at depths of 100 or 150km. This leads to heightened volcanic activity in these zones, as shown by the chain of volcanoes round the Pacific basin.

How explosive eruptions are depends mainly on the make-up of the magma. If its silicic acid count is low, as in Mount Etna, Sicily, or Mount Kilauea, Hawaii, the volcano generally remains benevolent.

This is because the gases contained in the molten mass find it easier to escape and do not build up a head of steam.

When the lava contains a higher silicic acid count and it is both more viscous and permeated by more gas, entire mountain peaks can blow up.

Pressure waves of hot gas and ash travelling at up to 200kph (125mph) make it impossible for people to escape.

If icecaps also melt, as happened last year on Nevado del Ruiz, enormous quantities of water sweep down into the valleys. Mixed with dust they bury entire villages under piles of hot sludge.

Such occurrences are infrequent but not unique. The worst recorded eruption was that of Tambora, in what is now Indonesia, in 1815, killing 92,000 people.

Then came Krakatoa, also in Indonesia, in 1883, killing 36,000. The last major eruption of Vesuvius in Italy was in 1631, when 18,000 people were buried in volcanic ash.

Nevado del Ruiz in Colombia showed how difficult forecasting is. There had been clear signs of an eruption for up to a year beforehand.

A stream of sludge 27km (17 miles) long poured out of the north flank for days but went virtually unheeded.

Nevado del Ruiz, like many other volcanoes, is in a developing country that cannot afford the necessary research and observation.

This is one reason why volcanic catastrophes are often wrongly classified as taking the world by surprise.

So Professor Schmincke favours the Unesco and International Volcanological Association proposal to set up an international panel of experts to handle crises.

They would be rushed to the spot whenever a volcano showed signs of activity to advise on appropriate measures to be taken in time.

Fllites and space stations could help. Measuring equipment could be positioned near remote volcanoes and readings relayed by satellite for evaluation.

Satellites can measure the Earth's surface temperature directly, and it can be an early warning.

Volcanic research is still in its infancy where distinguishing between dangerous and harmless volcanoes is concerned, however. Mistakes cannot be ruled out.

Nevado del Ruiz was not included among the 80 volcanoes listed in the high risk category.

El Chichón in Mexico would not have been included either if it had not erupted in 1982 just before the list was compiled.

Yet volcanologists are still in a better position to forecast eruptions than geophysicists are to forecast earthquakes, which is virtually impossible.

Volcanoes need only a more exact interpretation of the warning signs.

Dieter Schwab/df

(General-Anzeiger, Bonn, 29 November 1986)

Bonn joins in Russian Mars probes

West German research institutes are associated with the next Soviet unmanned interplanetary mission, Mars probes planned for 1988.

Two probes are to take a closer look at the planet and land devices on one of its moons, Phobos.

In 1994 the Russians plan to join forces with the French in sending further unmanned probes to Mars and a nearby asteroid, Vesta.

Western space experts see these plans as preliminaries for a manned journey to Mars, human endurance during the two-year flight presumably presenting more problems than the space technology.

At an international congress of cosmonauts in Innsbruck, Austria, a Soviet cosmonaut recently announced that the USSR planned to keep men in space for 10 months, as against eight, on future missions.

The origin of the planets, of their moons and of smaller celestial bodies, asteroids and comets, is one of the major mysteries on which research into our solar system hopes to shed light.

DER TAGESSPIEGEL

The Martian moons Phobos and Deimos are felt to consist of unchanged primitive matter dating back to the origins of the solar system four and a half billion years ago.

Both are dark, irregularly-shaped objects. Phobos is 27km, Deimos 15km in diameter. Both are fairly close to the planet's surface.

Phobos is slowly heading for a collision with the planet and could crash into the surface of Mars in about 100 million years' time.

A dozen countries and Esa, the European Space Agency, are associated with the Soviet Mars probes. The German research facilities are a trio of Max Planck institutes.

The Max Planck Nuclear Physics Institute, Heidelberg, is associated with laser gun experiments.

The Max Planck Aeronomy Institute, Lindau/Harz, is associated with tests of the Martian magnetosphere.

The Max Planck Extra-Terrestrial Physics Institute, Garching, near Munich, is associated with spectroscopy of the surface of Phobos.

dpa

(Der Tagesspiegel, Berlin, 22 October 1986)

Continued from page 7

building for conservation. Three 40-foot containers stand in the courtyard, to be used for a compact Piepho unit. A contract for serial production of the units has been given to a manufacturer in neighbouring Springe.

One hundred and fifty years ago Baron Adolf von Knigge wrote his book on etiquette at Bredenbeck. Ralf Piepho is also a man who knows how to conduct himself in the world.

He is used to getting things done and he gets very sharp when difficulties with officialdom are mentioned. This is particularly so when it is a matter of solving urgently an environmental pollution problem.

He is considerably put out that officials in the Lower Saxony state capital, Hanover, have deliberately ignored the process he has devised, that promises so much, for dealing with liquid manure surpluses.

The company's application for a subsidy of DM300,000 was not a matter of life and death, but it has lain in the Lower Saxony Economic Affairs Ministry for the past two years.

But he is irritated that large companies regularly get the best of everything. Ironically he says that he cannot serve the best champagne as they do at fairs and exhibitions.

Michael Jach

(Die Welt, Bonn, 3 December 198

■ WORDS

Poor paper, human beings, cause libraries problems

NÜRNBERGER Nachrichten

Poor-quality paper and damage caused by both readers and the march of time are causing headaches for many libraries.

At *Erlangen University Library*, a book 140 years old nearly disintegrated when it was eventually handled after lying, unnoticed and badly stored for several months.

Many pages had yellowed or turned brown and the paper was brittle.

This decay cannot be explained by age alone. Many older books are in perfect condition.

The cellulose from which they were produced, was made from animal products and cotton material such as rags and turned into a pulp, from which the paper would be produced by hand. It was chemically neutral and durable, but expensive.

The quantity of paper that can be made in this way is limited because of the basic materials required.

In 1844 paper began to be made from wood pulp, making it possible to meet the enormous demand for cheap paper in an industrialised age. But the quality was not good.

This cheap paper contains all the impurities of the original wood so that it has little permanency and will very quickly turn brown and brittle.

The more permanent product of wood is a chemical pulp. Wood without the bark is broken down into small chips. These are fed to a digestor and boiled under pressure with either acid or an alkali.

This process removes everything from the wood except the pure cellulose, which is then taken from the digestor, washed and bleached to the degree of whiteness required.

The problems of paper used in books was recognised early. About 1860 a method was discovered for ridding paper pulp of impurities with the aid of sulphide, producing a "wood free" paper.

"Unfortuntely this was not followed through," said Dr Karl Scheltz, responsible for the care of the books in the Erlangen University Library. The old cheap method was still necessary, particularly during an economic depression: in Germany, for instance, during the years of inflation in the 1920s and in the hard times after the Second World War.

Dr Schletz added: "The East Bloc countries still produce a lot of ligneous paper."

Libraries all over the world have to deal with the problem of paper fragility. The yellow-paged book that was discovered by accident in Erlangen could possibly be saved. If the contents are to be retained a photo-copying machine can be brought in to rescue the work.

But if the book is a valuable tome then it has to be sent to the book restoration institute of the Bavarian State Library in Munich.

If the book had not been found by accident anything could have happened to it. Dr Scheltz said that that was fate and shrugged his shoulders.

He explained that there was no control over which section of books in the University Library was threatened by disintegration. Books made of ligneous paper were stored away throughout the library.

Dr Scheltz again: "No-one knows where books are falling apart. It would be quite impossible to go through them all to protect and restore volumes in poor condition."

Taking out impurities from the paper is a very expensive process.

The librarians at the University Library know that the newspaper collection is particularly endangered. The dailies and weeklies are printed on low-quality paper.

Over the past three years the library has made enormous efforts to make the newspaper archives more durable and has experimented with new methods of storing the collection.

The newspapers had been divided into 2,400 bundles, covered with wrapping paper, tied up and stored away.

Now 1,140 volumes have been bound so that the newspapers are no longer pressed close together, difficult to get at and damaged when consulted. The German research society provided DM23,000 to do this.

Dr Scheltz does not believe that the Library's main problem is books printed on low-quality paper, however, but their bindings.

Books are sewn-bound less and less. Increasingly paste-binding processes *are being used, and now not only for paperbacks.*

"That is a most unfortunate development," said Dr Scheltz. "Deterioration is now built into the books. Book-binders say that paste binding is now just as good, but that is not true."

Books are photocopied a lot at Erlangen and this damages the spine and the binding considerably. The pages, kept together by glue, come apart. It is easy to repair sewn-bound books, but damaged glue-bound books have to be cut away and re-glued.

Dr Scheltz pointed out that margins are increasingly reduced to save paper, so that there is a limit to how often paste-bound books can be re-cut and glued together again. He said that this

Continued on page 11



Getting round the paper problem. Library worker stores microfilm.
(Photo: Süddeutscher Verlag)



A place for reflection . . . the new archives in Koblenz
(Photo: Günter Dohr)

Federal archives redesigned to ease access to information

A major challenge to archivists and historians is to provide a maximum of documentation with a minimum of documents.

The technology included in the new Federal Archives in Koblenz goes a long way towards achieving this ideal.

All that is now needed is a political-legal framework to control how the archives material should be used.

Interior Minister Friedrich Zimmermann hopes to get legislation governing the security and use of archives material through the Bundestag and Bundesrat during this legislative period.

Legislation protecting data is to be complemented by legislation controlling access to data, measures that will rationalise the work of the Federal Archives, Minister Zimmermann said at the opening of the new building in Koblenz.

The new archives building is very impressive and goes a long way to assuaging the complaints archivists and historians have made about inadequate legislation governing archives.

The new building is functional but at the same time aesthetically satisfying.

It was designed by Professor Günter Dohr from Duisburg. In his design for the entrance hall the architectural elements such as walls, ceiling, gallery, the stairway, lighting and artificial lighting concentrate on giving the visitor the idea of changing light rather than a pictorial composition. In the planning stage it was obvious that emphasis was being given not to artistic and architectural values but to the building's features as an archives that could be maintained economically. The accent is on preserving the documents included in the archives and providing a suitable place where people can work with low

RHEINISCHE POST

maintenance costs. This has been achieved by sensibly linking the three types of space required — store-rooms, workshops and a reading room — by a cross-shaped building design.

In addition it was decided *not to include air-conditioning in the achives'* store-rooms, but to use insulation materials in the building's construction.

The reading room is in the central section of the building, making it easy for people to work on the archives without interruption.

There are plenty of typewriters, dictating machines and facilities for the use of micro-film apparatus.

The desks in the reading room are laid out so that an eye can be kept on the readers. The Koblenz Archives will centralise the work of the Federal Archives, and provide opportunities to extend their work.

For practical, legal and historic reasons only the departments that were located in Koblenz were combined together. There are still subsidiary offices in Bonn, Freiburg and Frankfurt.

Material on government, the administration, various aspects of the German Reich in the period 1918 to 1945, material covering the Allied Occupation between 1945 to 1949 and the Federal Republic since 1949 will be stored in the Koblenz Archives.

The Archives are designed for the use of the government and the general public at large, that has a right to information about events in the past and, in a way, they will act as a kind of control over what the government currently does.

Jean Favier, director-general of the French national archives described archives as "the place for reflection," as a "catalyst to cope with the past and the present," protected from natural catastrophe and political folly.

The new Federal Archives should, according to Chancellor Kohl, help citizens to understand their past aided by the German Historical Museum in Berlin and the *Haus der Geschichte* in Bonn.

Peter Rzeznitzeck
(Rheinische Post, Düsseldorf, 22 November 1986)

■ ARCHITECTURE

Cathedral plan features transatlantic contrasts instead of mediaeval glory



No other era in world history is so much a part of European culture as the Middle Ages.

Today Europe lives under a sense of threat between superpowers America and Russia. The idea of the Middle Ages breathes new life into the Old World in an impetuous, elemental way.

The fascination with Umberto Eco's mediaeval detective novel (and film) *The Name of the Rose*, the new enthusiasm for mysticism and mythology, the revival of interest in the occult and witchcraft, of meditation and ecstacies, are all evidence of a newly-awakened nostalgia for the sources of occidental strengths, for the West's sense of identity, for Europe's lost superiority and experience of the world.

Have the Middle Ages become the deepest manifestation of the European spirit, a new mythos of European self-assertion, self-affirmation and self-confidence?

If this is the case then the architectural competition to redesign the surrounds of Ulm Cathedral, that has been going on for a century or more, came up with an anachronistic result.

Ten architects, most of them well known, were invited, to heal a wound in the mediaeval city's centre.

The winner was not an Ulm-based architect, nor even a German architect, but American Richard Meier, an eccentric "post modern" with strong connections with Le Corbusier.

What was surprising were Meier's plans that so impressed the jury, headed by Max Bächer from Darmstadt, an old hand at chairing juries.

Meier, who comes from New York, proposed a blend of the elements of the Guggenheim Museum, as an Ulm newspaper rather boorishly, but with some degree of admiration, commented.

If the city council gives its approval construction should begin in 1988.

The site surrounding the cathedral must be borne in mind. It is possibly one of the most tricky in the Federal Republic, and possibly in the history of German architecture.

The cathedral square at Ulm is very similar to the situation at Cologne Cathedral, but what happened in Ulm was perhaps not quite so drastic as in Cologne.

A clean sweep was made around Ulm Cathedral in the 19th century, and in 1890 the massive main spire was built on the cathedral's fabric, the highest cathedral spire in the world.

The cathedral was to be something of a showpiece. To this end a whole group of buildings, older than the cathedral itself, were demolished along with a friary, a church and a convent.

Too late the city fathers noted that the cathedral now looked like "an Easter hare made of cardboard." But the good citizens of Ulm blocked every attempt to rectify the situation.

Only now, after the third architects' competition this century, does the citizenry seem inclined to bring the mediaeval cathedral down to earth, as it were, and back into the city. Meier claims to have conceived his idea for a rotunda looking down from the cathedral's observation platform. This is a dramatically different standpoint from previous competitions.

In the past architects have been at pains to concentrate on drawing up lines of perspective of the cathedral. The other buildings are planned to harmonise with this and where possible increase its effect.

But in the new designs hardly a single perspective of this kind is included.

The prize jury has not taken notice of this nor tried to balance this deficiency with a particularly intense investigation of the relationships of the sight lines.

Meier's rotunda, just like his proposals for the bank buildings nearby, cuts off the perspective horizontally, a tendency that was previously avoided. The disadvantages of this can be studied in the rotunda in the new Schirn Museum in front of Frankfurt Cathedral.

Cologne architect Gottfried Böhm took second place in the competition. He was the only one to conceive a compact mediaeval design. The tall, hipped roofs of his design would be particularly suited to the structure of the cathedral square and absorb the accents of the other old building, if Böhm had not only made concessions to modern building materials such as glass and concrete, but *proposed a clumsy design,* to some extent fashionable in its details.

Böhm's designs rivalled an idea that was first introduced by Hans Scharoun in 1924-1925. It was oddly in direct contrast to the buildings there already, and could be interpreted as a polemic against the cathedral.

His proposals envisage a curved design of gravel segments that plume over the gabled post-war frontage and the filigrees of the cathedral facade with their even curves. The facade does not have a rosettte.

Scharoun later built the Philharmonie in Berlin. His idea in Ulm was conceived as an antithesis, as it were, to mediaeval bliss. Scharoun's streamlined entry design seemed to leave the mediaeval city, including the cathedral, out on a limb.

Apart from Meier no less than three other competitors in the latest competition took up the rotunda idea.

Meier has already built an impressive museum in Frankfurt that has been acclaimed internationally. He is now one of America's star architects, and will certainly give the people of Ulm an imposing building. Whether it is the right building in the right place will be argued for a long time to come.

Typically he will bathe his rotunda in white — an exotic, incorporeal colour for a cathedral square, that will make the building look like a bathroom.

The flat roofs of the adjoining "cube" and of the bank buildings in front of the gabled facades of the square will increase the unfamiliar impression and together with the building gaps to the south, of which there are far too many, the whole will sober down the view of the cathedral's frontage where unfortunately, from an architectural point of view, there are new streets.

The Baden-Württemberg state curator August Gebeßler said in judgment: "A super-modern design, very independent, that will reduce the space in scale anyway." But it is anything but an apotheosis of the Middle Ages, rather a building of transatlantic contrasts.

Drama can develop from this tension, but not a sense of community, spiritualisation or mystical union.

Alternative designs have been put on display in the lobby of the Ulm city museum. This is the old friary, dismantled more than 100 years ago. But the skeleton of the main building us still there, enormous in size, and the towering gables of its chapel.

It is the boldest and the most fitting alternative. The pity is it did not compete.

Dankwart Guratzsch
(Die Welt, Bonn, 25 November 1986)

Continued from page 10

development was the worst thing that had ever happened to book production.

He is satisfied with the progress made in restoring leather and thick vellum bound books, a processes that is still going on.

Over the past seven years an assistant has treated between 18,000 and 20,000 volumes with a sizing solution and potash, treating the leather with a leather preservative and then polishing the volumes.

The Trew Library has been especially treated in this way, a valuable collection of natural science books dating from the 16th to the 18th century, left to the Library by a doctor and natural scientist.

In Dr Scheltz's view people are the greatest danger to books. Books are no longer treated with care and respect.

People think they can do what they like with a book. They scribble on the pages and even tear pages out. People steal books with impunity, the worst being the law and theological students, according to Dr Scheltz.

Out of necessity compromises have had to be made about room temperatures in the Library. The best temperature for the books is about 16 degrees centigrade, but not for the people who have to work in the store-rooms.

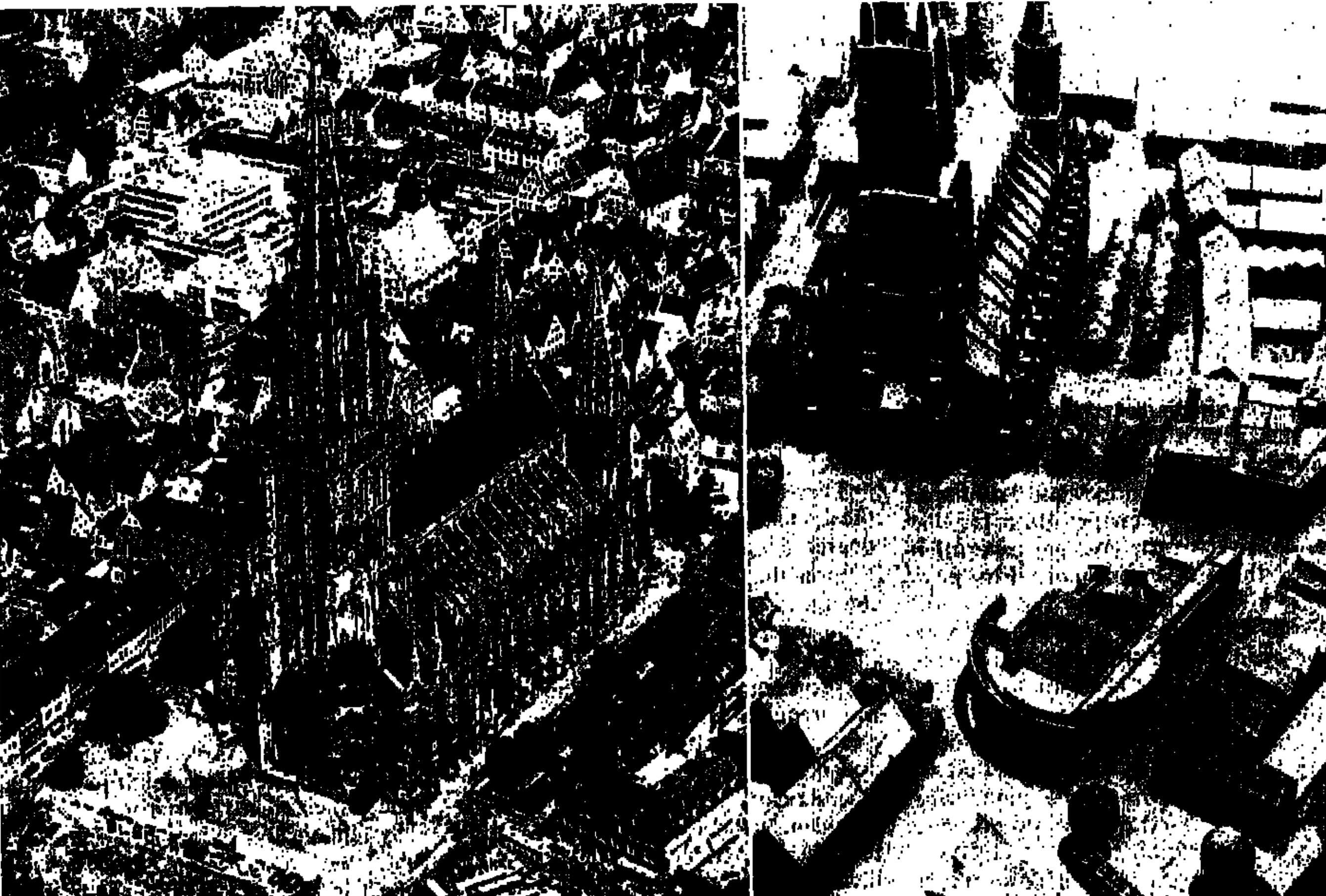
Bright light, particularly ultra-violet light, is the most dangerous for old manuscripts that were coloured with very sensitive inks.

If the humidity is kept down then micro-organisms such as fungus and insects, are kept away.

Bookworm lavae have either died out or they do not like munching away at the leaves of the books in Erlangen University Library.

Dr Scheltz said: "I have never seen one during my whole career."

Gertraud Pickel
(Nürnberger Nachrichten, 1 December 1986)



Before and (probable) after: Ulm Cathedral (left) with model of prize-winning design.
(Photos: Krug-Bild, Freigabe Karlsruhe Nr.0/9775/Simun Re

■ EDUCATION

Early help for talented children is essential, meeting told

Intellectually gifted children tend to fade if they do not maintain contact with equally bright children, according to a Dutch study.

Professor Mönks, of the Catholic University of Nijmegen, said tests on Dutch children showed that early promotion of the gifted was essential.

He was speaking in a debate at the Bonn Science Centre held with the aim of providing ideas for Bonn Education Minister Dorothee Wilms.

It was held by a pep group consisting of psychologists and educationalists, representatives of bodies promoting gifted students and of spokesmen for industry.

Views differed on definitions. Most speakers felt the idea of "gifted students" was artificial.

Conventional IQ tests only partly accounted for the levels achieved by the gifted. They were in any case first devised in France to help the educationally sub-normal.

Other factors such as creativity or outstanding ability to solve problems evidently do not depend solely on IQ.

Yet these qualities are, for instance, what chambers of commerce and industry want far more than mere proficiency in reading, writing and arithmetic.

Munich psychologist Professor Weinert, a specialist in thought process research and author of a bulky research report on the subject, was criticised by colleagues. They included Dr Rüppell, a Cologne psychologist specialising in creativity research who will shortly be publishing his own findings.

Professor Weinert called for supply-

Frankfurter Allgemeine

side promotion of gifted students rather than systematic promotion within the selective framework of the educational system.

Yet no specific mention was made of the wide and ambitious range of supply-side opportunities that were to come the gifted student's way, as Professor Mönks of the Catholic University of Nijmegen complained.

A contradictory feature in Professor Weinert's report was, he felt, the hesitant but, in the final analysis, definite approval of different categories of school after primary school but not at primary level itself.

In Holland, where children now start school at four and attend comprehensive school until they are 13, attempts have been made to identify gifted children even among the four-year-olds.

Professor Mönks favoured promoting gifted students from the earliest age, arguing that nothing was less fair than equal treatment of the unequal.

A crucial factor in the development of talent was the environment, including school, family and peers — defined as others "equal in development."

Talent tended to fade when a gifted child lacked contact with its peers, as tests of Dutch 4-to 12-year-olds and 12-to 14-year-olds had shown.

There were about three per cent of gifted students with outstanding scholastic achievements and a further three per cent of gifted students who totally lacked stimulus and suffered from serious psycho-social problems.

This second group consisted, Professor Mönks said, of "blocked talents."

These findings are not in themselves anything new. Back in the 1920s a Californian, Terman, found intelligence as such not to be crucial.

It must be accompanied by personality traits such as self-assurance and stamina, strength of character, a favourable school background and teachers who motivate the student to learn.

Terman was the 12th of 14 children and felt lucky to have attended a single-class country school with fine teachers who allowed him to work, irrespective of age, alongside pupils who had reached the same level.

Professor Mönks mentioned the German intelligence specialist William Stern, who arrived at the same findings as Terman in 1916, even earlier.

Talent, Stern said, was always only potential achievement, not the achievement itself. Keen interest and strong will-power were needed if it was to develop.

So Stern called, 70 years ago, for special educational facilities for primary school children for the age of six.

Immense efforts were undertaken, he complained, to diagnose the mental condition of society's problem cases, but not of its young hopefuls.

Professor Weinert was accused in the debate of too categorically rejecting "systematic orientation" such as special streams for gifted students as existed in East Bloc countries.

His counter-argument was that gifted students might not emerge or be identified as such until later stages, so pupils suitable for special streaming might be missed out.

A spokesman for industry complained that technological skills which were the cornerstone of all industrial innovation were not encouraged at all at school. Like sports promotion, they had to be encouraged on the basis of private initiative.

Unlike sports promotion, for which there was a pool of industrial donors, not enough was done to encourage technologically gifted students.

Another speaker said it was surely worth noting that in other countries, such as Japan, no attention was paid to intellectual ability, the emphasis being strictly on comprehensive learning.

Students at Japanese comprehensive schools sat very tough exams in at least five subjects and had to pass to qualify for the next stage of schooling.

The exams tested their general education and were also tests of their memory, tenacity, interest and motivation, all of which were qualities also expected of gifted students. Were they perhaps the best way to filter out the gifted? Professor Weinert agreed that even the capable thinker could not manage without expert knowledge.

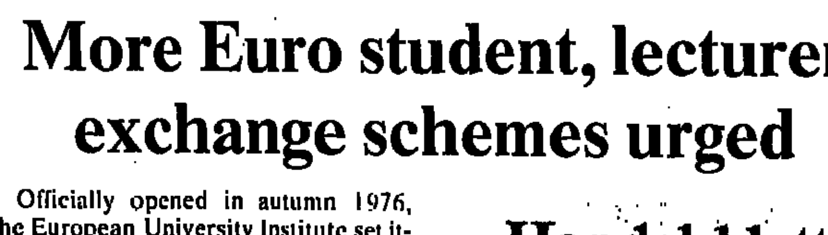
Another speaker also felt that the "visible achievement at school and in the various competitions" held by the organisation that sponsored the Bonn gathering was the most useful guide in practice.

Parents of gifted children who attended the debate, if any did, will have been left feeling somewhat helpless.

Yet no mention whatever was made of gifted students of music, sport or handicrafts, whose problems were also due to be discussed.

Brigitte Mohr

(Frankfurter Allgemeine Zeitung für Deutschland, 28 November 1986)



More Euro student, lecturer exchange schemes urged

There should be more university exchange schemes in Europe and students under such schemes should not have to pay fees, says Bonn Education Minister Dorothee Wilms.

Speaking at a ceremony to mark the tenth anniversary of the European University Institute in Florence, Italy, she said there should also be more exchanges of junior academic staff.

Frau Wilms favoured transforming bilateral into multilateral partnership arrangements.

University partnerships should include student and academic staff exchange schemes, the development of joint study programmes and courses and, to a greater extent than in the past, joint research projects.

Fees should be abolished for European students and national authorities ought not, she said, to be so anxious in the debate on equality of university qualifications.

University exchange and academic cooperation in Europe must lay the groundwork for the younger generation to see themselves in more European terms.

From 1988 extra funds were to be made available in special research sectors at German universities to host young European specialists.

As current chairman of the institute's governing body Frau Wilms said that after initial problems in its pioneering days it had gained a fine and growing academic reputation.

She thanked the Italian government for having provided so generously the capital outlay needed to launch the institute.

Officially opened in autumn 1976, the European University Institute set itself the task of extending the idea of European integration to teaching and research.

Handelsblatt
WIRTSCHAFTS- UND FINANZZEITUNG

It is a postgraduate teaching and research facility equipped with the latest in computer technology and specialising in history and art history, economics, the law and political and social science.

A research sector to which particular importance is attached in comparative interdisciplinary European studies.

Students, all with first degrees, are selected in accordance with strict principles.

They are expected to submit a PhD thesis in three years or to take a master's degree in one year.

From the one-year LLM courses they emerge as masters of legal studies in comparative European and international law.

At present the institute has about 200 postgraduate students and plans to increase their number to 300 in the years ahead.

In its early years, said the institute's president, former Bonn Interior Minister Werner Maihofer, the institute lacked a "critical mass" of postgraduate students and staff.

Professor Maihofer, who has held office since 1981 and whose contract runs for a further 18 months, now feels his wildest expectations have been exceeded.

Applications are five to seven times the number of places available — about 60 a year.

Staff at present consists of 30 full-time professors, limited to seven-year contracts, and a larger number of external staff who lend students additional academic and research support.

The revolving system of staff appointments has, he feels, led to the institute having friends and supporters at many European universities.

Sixty-eight PhDs have been awarded. Initial difficulties in ensuring recognition of degrees in European Community member-countries have been eliminated. New PhD regulations have been approved.

Some students prefer to write their theses mainly in Florence but to submit them in their countries of origin.

Systematically encouraged multilinguality has proved a tremendous advantage. The accepted practice is to write theses in another language and not in one's own.

Students once admitted are usually awarded first- and second-year grants by their countries of origin, with substantial differences being offset from funds of the institute's own.

The institute also awards third-year scholarships.

Young PhDs or established scholars may apply for 12-month Jean Monnet research scholarships. At present 30 Monnet scholars are working at the institute.

Professor Maihofer is particularly proud of the European Policy Unit, set up in 1984 and already widely acknowledged for its political consultancy work.

The DM24m annual budget is met largely by Britain, France, the Federal Republic of Germany and Italy, each providing just over 21 per cent.

Smaller European Community countries contribute accordingly. Funds are also supplied directly from the European Community budget.

The institute is housed in Badia Fiesolana, a Renaissance monastery near Florence. Two nearby villas were made available and fitted out by the Italian government.

Initial findings indicate graduates' career prospects to be good. One in three works for international bodies or national administrations and parliaments, a third at universities and the final third in business or for associations of one kind or another.

The institute publishes an annual brochure outlining application requirements, procedures and grant facilities.

(Handelsblatt, Düsseldorf, 25 November 1986)

■ HEALTH

Clinic tries to halt vicious circle of parent-to-child alcoholism

A Caritas clinic for alcoholics in Hennef, near Bonn, is the first in Germany which accommodates pre-school children of alcoholic mothers.

Children whose parents are alcoholics run a risk of becoming alcoholics themselves one day.

Many are maltreated when their mothers or fathers are drunk and spoiled when they are sober and feel guilty.

Others are simply neglected. Clinic director Rita Feldmann-Vogel recalls one mother who spent all day in bed and was unable to look after her home or her child.

"Our patients have not only swal-

KielerNachrichten

lowed alcohol for years," she says. "They have also swallowed their problems."

The consequences can be catastrophic. Children lose confidence and orientation and are unable to fit into social groups.

Even infants can show signs of serious behavioural disturbance and are usually underdeveloped for their age.

Older children lose their sense of self-esteem and are tempted at an early age to resort to habit-forming drugs of their own.

Frau Feldmann-Vogel says over half her female patients come from homes where either their mother or their father was an alcoholic.

Studies in the United States and the Federal Republic bear out this finding. The Zissendorf Clinic in Hennef tries to break this vicious circle.

It does so as an experiment financed by the health insurance scheme for white-collar workers, which meets the cost of a kindergarten and a kindergarten teacher. Mother and child share a room.

The aim of the experiment is to clarify and stabilise relations between mother and child, to teach mothers better approaches to bringing up their children and to jointly seek solutions to problems that arise.

"Mothers often still feel like children themselves," Frau Feldmann-Vogel says. "They feel unable to bear responsibility."

The aim of treatment is to enable mothers to mature. They must learn to stop using their children as a means of letting off steam.

They are taught patience, continuity and affection as approaches to motherhood. Children are taught social behaviour, games suitable for their age and readiness to give of their best.

The clinic tries to make good shortfalls in development and to make patients feel a sense of achievement and success.

Some mothers only agree to undergo the six-month course of treatment because of the opportunity of bringing their children with them.

One patient is a woman of 30 who is staying in Hennef with her four-year-old illegitimate son Peter. She has another son aged 12 and says relations with her husband are petrified.

She was urged by her parents to marry him and had sought to escape growing isolation from her husband by increasing her alcohol consumption.

"Peter," the therapist writes in his case report, "constantly wants to be a baby again. He lies in his mother's lap and talks baby talk. He is also a heavy bed-wetter."

Many women first take on their roles as mothers at the Bonn clinic. Not all last the distance. Between one in five and one in three drops out.

Thirty per cent start drinking again within a year of treatment. Fifty per cent are still teetotal after four years, 50 per cent aren't.

Many patients return to living conditions in which violence is a customary means of argument and deeply disturbed relationships drive them back to drink.

"After-care, especially after mother-and-child treatment, is indispensable," Frau Feldmann-Vogel says. "We don't discharge women unless they are taken over by groups such as the good templars back home.

"Few can be sent back to the care and protection of an intact family or career."

Sigrid Latka-Jöhring

(Kieler Nachrichten, 22 November 1986)

Quick'n nasty

Fast foods and ready-to-eat meals like so-called TV dinners contain a wide range of additives that can trigger allergic responses, says a report.

A Mönchengladbach medical training course run by the League of Allergy and Asthma Sufferers was told that fast food frequently caused itches and colds.

The additives that were to blame ought to be specified.

dpa

(Kölner Stadt-Anzeiger, Cologne, 22 November 1986)

Plans to issue X-ray passes

An X-ray pass launched by Bonn Labour Minister Norbert Blüm is intended to record and help reduce medical radiation levels to which patients are exposed.

Dr Blüm unveiled the pass as part of a revised version of the radiological protection regulations governing roughly 50,000 X-ray units in the Federal Republic of Germany.

Passes are issued on request by health insurance schemes. Doctors are to enter into the new passes all X-ray checks patients undergo, including the date and part of the body examined.

On subsequent presentation examining doctors can check whether X-ray exposures already exist that suit their purpose.

Medical staff will at all events know when and where the patient was last X-rayed and be able to decide whether further exposure to radiation is necessary or advisable.

dpa

(Kölner Stadt-Anzeiger, Cologne, 13 November 1986)

Father's role in the family is under-estimated, says report

Fathers play a more important role in families than they have been given credit for, says a report by the Central Mental Health Institute in Mannheim.

Children, especially boys, who are separated from their fathers when the parents split up tend to suffer emotional problems, according to an institute survey.

Nearly 400 children were investigated, first as eight-year-olds and then five years later as 13 year olds. Mental problems were found to be frequent among children who had lost their fathers at an early age.

These problems were most apparent among the eight-year-olds. They were less so by the age of 13.

Fatherless children were found to be shy, sad, depressive and tending to seal themselves off from others.

Others showed even more marked characteristics, such as a tendency to lie, steal, play truant, run away from home, wet their beds or eat too much or too little.

Parental divorce or separation was the most frequent cause of "father loss." Very few children or families investigated had lost fathers through death.

Children whose fathers had died tended to come to terms more satisfactorily with the loss and showed no more frequent signs of mental problems than children from intact families.

The implication is that separation itself is less traumatic than the parental clashes that precede it.

Sons were found to have suffered so much from the absence of their fathers that their normal healthy mental development was affected.

Daughters in contrast were "much more robust" and generally less dependent on paternal relationships.

But the father's mere physical presence is not enough to ensure healthy mental development. Psychopathological symptoms were found to be well above average in families where the father neglected his share of bringing up the children or was himself behaviourally disturbed.

Staff of Munich University Hospital psychiatric clinic have studied the long-term effect of loss of one parent or the other in childhood in 1,500 cases.

They conclude that the repercussions can extend to adulthood and that the risk of mental illness is heightened.

Loss of the father seemed mainly to affect the sons' mental health, while daughters suffered correspondingly from the loss of their mother.

The long-term effects of parental loss must not be overrated, however, as many other factors and experiences contribute substantially toward mental illness.

(Stuttgarter Zeitung, 24 November 1986)

■ HORIZONS

For Fritz, 65, a man's cave is his castle

Süddeutsche Zeitung

It is cold and dark. In summer the temperature hovers just a tick above and below zero. Dark. If the wheel on the old, cylindrical lamp is turned to the left so water stops falling on the brown lumps of carbide, the small white flame would slowly die out and leave blackness.

There is nothing like this blackness. Alexander von Posselt wrote about it in 1879 after becoming the first person to enter the depths of this huge hole on the eastern flank of the Untersberg, a peak in the Bavarian alps near Berchtesgaden.

He described how, when he came to the end of the rope on which he was hanging, he lowered his lamp on a length of tape measure. The lamp caught on a piece of rock, and when he tried to work it free, the tape broke and the lamp clattered into the depths below.

"I crouched on the icy slope. I never knew how black darkness could be."

This darkness holds no terrors for potholer Fritz Eigert, 65. He has virtually been living with it for 30 years as tourist guide employed by the Potholers Club at Markt Schellenberg, between Berchtesgaden and Salzburg.

During the war, Eigert, who was born in Silesia which is today part of Poland, spent a winter inside the arctic circle in northern Finland with an artillery unit.

In winter the sun does not come up over the horizon for three months. It drove some men mad, but Eigert was sorry when they had to pull out.

Before the war, he worked in his father's cabinet-makers workshop. After the war, after returning from two years as a prisoner of war of the Russians, he went to Regensburg where he passed his master-tradesman papers.

But the mountains beckoned, so he set off in early summer of 1954 and looked for work. He reached the small market town of Schellenberg, near the Austrian border.

When work colleagues told him about the world deep under the Untersberg, he joined the local potholers' club and went up the mountain for his first look.

The cave appears as a black abyss in the almost sheer side of the mountain. From below, the mouth is not visible because it is blocked off by an icy wall several metres high. From above, the reflection makes it look like a lake, but it is in fact the 30-metre thick layer of smooth ice that runs down into the mouth.

For millions of years rainwater in the summer and melting snow in autumn and winter has run through into the interior and mixed with carbonic acid and humic acid to form an aggressive solution which eats into the soft chalk walls and roof, creating more and more cave space.

At some time, either the weight of rock or perhaps an earth tremor, caused the cave to collapse. Great caverns, fissures and shafts opened up. One such shaft found its way upwards to the side of the mountain where it formed the mouth. It is still there today.

Cold air poured in and could not escape. When 3,000 years ago, the climate became worse and temperatures sank, the infiltrating water froze and, over the centuries, grew to a huge mass until coats of ice metres thick covered the walls and domes, columns and protruberances of ice formed.

Draughts of air kept the surface of the ice evaporating which, in turn, helped keep the shafts and caverns from blocking up.

Fritz Eigert has stayed with the cave since he found it. In 1957 he became a guide and began taking tourists up to see it. After 30 years, he has probably taken up more than 300,000 — about 20,000 trips with parties of, on average, 15 people. He takes them down through the mouth, past three ice traps and into the 55 metre cavern known as the Fugger-Halle.

He works 1,000 hours a year to keep the access ways clear for visitors in addition to guiding. This means he has spent a total of about 45,000 hours at the site — more than five years of his life.

"A love of mathematics and an inventive streak have helped him. He is a cabinetmaker turned land surveyor. He has painstakingly surveyed the interior using a theodolite, a plumb-line and a compass all mounted on a sawn-off spirit-level.

He has created a gimbal-like suspension system so that a torch can be held vertical no matter at what angle its descent so that from any point on the ground a beam of light can be thrown vertically upwards to the roof.

He has assiduously built up a profile of the chamber inside the mouth, which is 70 metres by 40 metres, using these tools and trigonometric principles — position of torch, position of point of light on the roof, and a third point.

He has surveyed the labyrinth to which the entry chamber gives access, a difficult-to-reach maze of shafts, caverns and small, connecting ducts made out of limestone. One of these small ducts ends in a 45-degree tunnel that leads up towards the surface only to be blocked by interlocking boulders.

Anyone going further runs the risk of being imprisoned by a boulder crashing down behind and blocking the retreat.

Over the years, Fritz Eigert has got to know every piece of rock, every ledge and irregularity in the ice formation. He is the king here. Sometimes when the melting snow water leaves ruddy traces on the walls, he tells tourists it is the beard of Kaiser Friedrich Barbarossa who, according to legend, sleeps in the Untersberg.



More than just potting about in a hole, much more. Fritz Eigert and his cave. (Photo: Holzhaider)

The cave governs the rhythm of his life. After Easter, he goes up the mountain and stays up there in a little hut near the cave mouth until the middle of December.

Before the tourist season, from May to the end of October, the ice which over the winter covers the wooden steps leading up to the mouth must be hacked away.

During the season, it's tourists during the day and nights alone in the hut, doing the accounts, eating, reading and reflecting on the cave.

How does the draught get in? Why is it warmer in the deepest chamber although hot air rises and cold air sinks?

Why does the stratification of ice begin horizontally and then proceed back and forward, across other strata? Why do birds which feel death approaching come here to find an ice-free place to die, the so-called jackdaw graveyard, where countless bird skeletons litter the floor?

After the tourists go away, work goes on. The wooden access steps are repaired or replaced. Fritz has his hands full up until shortly before Christmas.

He spends Christmas down in the valley, but in January goes back up again. Even snow metres deep can't stop him. In summer, the ascent takes two hours. It has taken him 30 hours in winter, and that with 30 kilos on his back.

Once he had to dig through two and a half metres of snow to reach the top of his alpine hut chimney.

What drives him on? It's difficult to find out. It is true that the Potholers' Club pays him even in winter when the cave in inaccessible. The hours he works the rest of the year are enough for a whole year. But that is not the way he thinks. It has nothing to do with money.

The cave has influenced his entire character. It has affected the way he walks, with small, cautious steps; it has affected the way he looks at things, vigilantly, with an developed eye for subtle changes in rock and ice forms.

No, it is a question of involvement. Work with the cave was his idea of work that meant something. He gave up his sawmill job in the valley to do it.

He doesn't become easily excited. But once during our long talk, he slammed the table with the flat of his hand: how is it? he asked, that there are people who drop their tools at the sound of the five o'clock hooter? people who work purely for money and not to achieve something?

He doesn't see his job as being limited by either time or location: it doesn't end at the pothole mouth. Otherwise he would not one day have carted back to his tiny, nine-square-metre quarters a badly injured chamois and fed it mouth-to-mouth with hard bread which he first chewed up himself.

For 30 years, Fritz has never been off duty, except for a few weeks every February and March, a time which he looks upon as holiday.

He regards reliability as the most important virtue. Anyone who is unreliable is in his bad books for ever.

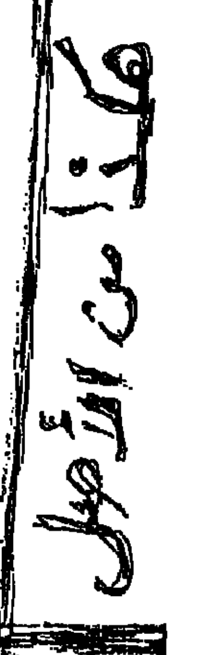
When Franz Josef Strauss was Bonn Minister of Finance in the 1960s, he came to the Undersberg but, because of lack of time, was unable to visit the cave. Fritz could understand that. But he can't forget that Strauss promised to come again, and hasn't. Fritz has always voted CSU, Strauss' party.

When this month, Fritz Eigert makes the descent to the valley, it will probably be for the last time. His successor has already been appointed. He was discovered through an advertisement in the potholers's newspaper, *Zeitschrift für Höhlenkunde*.

And he fulfils the requirements for the job: single, because tiny quarters aren't big enough for two; not taller than 5ft 7in, because the bed is only 5ft 8in; durable and resourceful.

The last qualities are essential be-

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■ FRONTIERS

Under the old oak tree with Sgt Köster's recce platoon



Reconnaissance troops in the West German army are élite soldiers. Their prestige rivals divers, frogmen and jet pilots.

There are only 500 recce soldiers in the 370,000-strong Bundeswehr.

They wear a claret-red beret and a badge displaying a diving eagle with a flash of lightning in its claw and with crossed spears in the background.

The eagle represents the parachutist, the lightning communications and the spears reconnaissance.

It could be eleven in the evening. There is drizzle in the wind. The surrounding pine trees make the night even darker. Occasionally lights flicker from a nearby Lower Saxon village.

In these conditions it is unlikely that anyone is out for a stroll along the banks of the River Aller. But if someone did happen to be out the pedestrian would have a close encounter of the third kind.

A shape creeps through the thinned-out undergrowth, gets under cover again on the edge of the forest and turns his head as if he has got wind of something.

A little later three other shapes cross the path, just as unfamiliar as the first. They do not look like people in the dark because of the enormous rucksacks they are carrying.

They can see in the dark by means of night-vision apparatus strapped across the face with protruding eye-pieces. The parts of the face that can be seen are camouflaged dark green.

They are in fact very much of this earth and carry automatic weapons, clearly indicating that they are stalking through the forest for non-peaceful purposes.

Sergeant Holger Köster's men of a reconnaissance unit are creeping through the undergrowth in a night exercise.

The temperature is five degrees centigrade and the water temperature is 10 degrees, so the exercise is a trial of endurance as well.

Reconnaissance troops carry all their equipment, including the night-vision apparatus with the protruding eye-piece, a ground-sheet and a poncho cape. They wear rubberised clothing against the wet.

They slip into the river behind the bundle of their equipment. They can barely be seen at all, partly because their faces are camouflaged.

In a few minutes the squad gathers together again under an oak tree on the opposite bank of the river, wet but all there.

Sergeant Köster and his squad belong to the 100th Reconnaissance Company, stationed in Brunswick. They are an élite unit in the army. Captain Peter Seja, commander of the 100th Reconnaissance Company agrees with that, "but we have very special duties to perform," he said.

Each of the three Bundeswehr corps has a reconnaissance company attached to it. The official brochure issued by the Defence Ministry says that their duties involve penetrating enemy lines and reporting back via sophisticated communications equipment to their own battle command.

Colonel Hans-Joachim Belde, responsible for this special reconnaissance unit in the Defence Ministry, explained: "Reconaissance troops as such do not have a combat mission. In action they avoid the enemy, but they are not on a sabotage mission either. They are reconnaissance troops, not commandos."

In an era of electronic sensors, infrared reconnaissance and satellite links four-man squads of this kind create a strange impression at first sight. But an officer involved in major manoeuvres claimed that three-quarters of all battle information is provided by reconnaissance troops, despite all the technology.

There is no alternative to reconnaissance men when the weather disturbs electronic equipment and the enemy, using their own electronic equipment, can jam communications.

Staff officer Belde said: "There are no sensors on earth that can replace the ear, eye and brain of man."

Reconnaissance troops have the task of getting to places where they can observe columns of tanks, helicopter traffic or missile transport movements — behind the enemy's lines, 20 or 30 kilometres behind the front.

One of the possible ways to get to such a position is by air, and only men who are cautious and prudent are suited to the job.

Even in good weather it is not everyone's cup of tea to go up 3,500 metres in a helicopter. It is windy even in good weather and the helicopter vibrates a lot.

Into the bargain Sergeant-major Klaus Rosenkranz pulls open the exit panel and that is no joke at temperatures of below 20 degrees centigrade three and a half kilometres up in the sky.

The sergeant-major does not have time to think about things of this sort, for in a few minutes, with a grin, he has jumped into the cold air, followed by his three comrades.

After a few seconds they pull the ripcord of their parachutes and slip in wide spirals through the sky.

The parachutists seem to be motionless in the air because of the strong wind. Only after nearly 30 minutes do they land at a spot about 20 kilometres away as the crow flies from the position where they jumped out of the helicopter.

The manoeuvrable parachute, that opens at considerable heights, is one way reconnaissance troops can infiltrate enemy territory.

In action the jump would be made at night and the recce soldier would be carrying more than a hundredweight of equipment.

Men of the reconnaissance unit have to carry everything they need on their backs.

There is considerable discussion in the Defence Ministry about the most suitable method that could be used for air transport.

Night vision, cold water and one-man aircraft . . . the reconnaisance unit. (Photo: Kister)

Colonel Belde confirmed that his troops experimented "with unconventional means," but he was not prepared to go into details.

There is not much down in black and white on the transport methods used by reconnaissance troops, but there is mention of motor-driven hang-gliders, which are really *ultralights*, and other flying craft that can carry one man. There is sometimes a James Bond touch in reconnaissance company equipment, although the high-tech associated with spy films is not common. Recce servicemen do have small arms fitted with silencers and night-vision equipment but, until a short time ago, their small high-frequency radios were powered by standard Bundeswehr batteries.

This meant recce units had to carry with them 12 kilograms of batteries for a 14-day exercise. The position has been improved by using different batteries.

The "rapid transmitter" remains, however. This radio condenses wireless messages into just a flash. It does this, as it was done 40 years ago, mechanically.

Encoding, aided by code books, and transmission of the message is done by hand. Telecommunications systems are also just as ancient. They receive data from the reconnaissance troops behind the lines that has to be passed on.

There is something anachronistic about units that operate with the bip-bip-bip of radios and ageing telex machines.

There is no lack of recruits for the reconnaissance units, despite or perhaps because of, the tough training. One out of every eight who applies to join the unit is successful, according to Colonel Fiedler, who was the driving force behind the establishment of the reconnaissance units.

There are few national servicemen in these élite units, whose members have to do radio and parachute courses, one-armed combat and judoka training.

Recce recruits have also attended courses on arms and the tactics of Warsaw Pact troops.

They are given IQ tests because a lot is expected from them under extreme conditions. One officer said that recce troops were crème de la crème personnel.

Captain Seja believes that healthy self-confidence is also important. He said: "I don't want men who barge into the canteen and boast about the number of jumps they have made. I want men who are dead certain that when they go out on a mission they will come back from it."

Colonel Belde described this as essential "mental conditioning." This includes being able to put up with three other men for days or weeks on end in a confined situation.

In action reconnaissance troops usually live in a well-camouflaged bunker that they rarely leave for fear of being discovered.

The four-man hole, dug in the course of one evening, serves as a radio station, sleeping space, kitchen and toilet.

From such a position recce personnel report back what goes over the bridge they are watching or a cross roads they have under observation.

Each man has 60 kilograms of rations in his pack that can keep him going for two weeks in the dug-out, before he makes the hazardous trip back to his own lines.

"Mental conditioning" is increased in peace time through exercises and training with other foreign élite units.

The international reconnaissance training school is in Weingarten. It has two training sectors.

West German reconnaissance recruits are drilled in the German sector, where further training is also provided.

In the international sector reconnaissance troops from the various Nato countries train together.

Mainly because of this foreign participation the reconnaissance school is not open to the public and there is no literature dealing with its activities.

In the 100th Reconnaissance Company's bar there are badges that have been exchanged with many British SAS units and Dutch and Belgian élite units.

The self-confidence the recce servicemen is put to the test sometimes; they jump through the bar window, mainly early in the morning and without a chute. The bar is in the uppermost storey of the company offices building.

Kurt Kister

(Süddeutsche Zeitung, Munich, 25 November 198[illegible])

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cause, as Fritz explains, "you have to be able to help yourself in any given situation. You have to be able to work a seven-day week, between nine and 10 hours a day. And in winter you have to be able to cope on your own."

He has never complained about too much work or too little company. He does not have the feeling that he has missed anything over all these years: "I have lived my life in my style. I haven't missed anything."

His last descent will be as unspectacular as his first ascent. When he leaves, there will be nothing in the cave to tell the unaquainted that Fritz Eigert means anything around here.

He has taken care of that. He has already named all the known but not already named caverns and chambers in the subterranean jungle.

And the little hut has been named Villa Fledermaus "so that no one gets the idea of calling it Fritz Eigert Hut."

Hans Holzhaider

(Süddeutsche Zeitung, Munich, 2 December 1986)